setup guide

network printing

hp jetdirect 380x (usb)

802.11b wireless print servers

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Hewlett-Packard Company

J6061-90001

setup guide

hp jetdirect 380x

802.11b wireless external print server (usb)

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Contents

1. Introduction

What's in the Box. 1-1
For the Details... 1-2
What You Need to Supply. 1-3
Wireless LAN Terms and Concepts 1-4
Access Point 1-4
Ad Hoc (Peer-to-Peer) Mode 1-5
Authentication 1-6
Channels 1-7
Infrastructure Mode 1-8
Service Set Identifiers (SSID) 1-8
Signal Range 1-9
Wired Equivalent Privacy (WEP) Keys 1-9
Network Printing Terms and Concepts 1-10
Client-Server Printing 1-10
Peer-to-Peer (Direct Mode) Printing 1-11
Network Protocols 1-12
Network Address 1-12
Hardware Address 1-12
If You Need Help... 1-13

2. Installing the Print Server Hardware

Steps to Install the Hardware. 2-1

3. Making a Wireless Network Connection

Before You Begin... 3-1
Using a Microsoft Windows Wireless PC 3-3
Using an Apple Macintosh Wireless Computer 3-6
Optional Wireless Connection Setup Methods 3-7

4. Installing the Printer on a Network System or Server

Before You Begin... 4-1
Microsoft or Novell NetWare Networks 4-3
    Client-Server Networks 4-5
UNIX Networks 4-6
Apple MacOS networks 4-6
To View Documents on the CD-ROM 4-7

5. Troubleshooting Problems

Status Light (LED) Indications 5-2
    Wireless/Status Light 5-2
    USB Light 5-3
Configuration (Test) Page 5-4
    If the Configuration Page Does Not Print, or is Unreadable 5-4
    Different Configured Channel Shown on Configuration Page 5-7
Unable to Communicate with the Wireless Print Server 5-8
    —During Initial Setup: 5-8
    —After Initial Setup: 5-9

Wireless Signal Weak or Failed 5-10
Firmware Upgrade Failure 5-12
Resetting to Factory Defaults (“Cold Reset”) 5-14

A. Getting Support and Service

HP Support by Phone A-1
Getting Warranty Service A-2
HP on the World Wide Web: A-3
HP User Forums (USA only) A-3
Software, Driver, and Firmware Upgrades A-3

B. Technical Reference

Radio: Channel Frequencies B-1
HP Jetdirect CD-ROM Software B-2
HP Jetdirect Tools Summary B-3

C. Specifications and Regulatory Statements

Networking Specifications C-1
Wireless Networking C-1
Supported Network Operating Systems and Protocols C-2
Physical Specifications C-3
Interfaces C-3
Dimensions C-3
Weight C-3
Environmental C-3
Electrical Specifications C-4
Power Requirements C-4

Power Modules C-5
USB: Downstream Power Supplied C-5
Electromagnetic Specifications C-6
Electromagnetic Emissions *C-6*
Wireless Telecommunications Certifications C-6
Safety Statements C-6
Regulatory Statements C-7
USA: Federal Communications Commission (FCC) C-7
Canada: *C-8*
Australia: *C-8*
Korea: EMI C-9
Taiwan: Class A C-9
Japan: *C-10*
China: Chinese Safety Statement C-11
European Union: *C-12*
Belgium: *C-13*
France: *C-13*
Netherlands: *C-13*
Italy: *C-14*

D. Limited Global Warranty Statement and Service

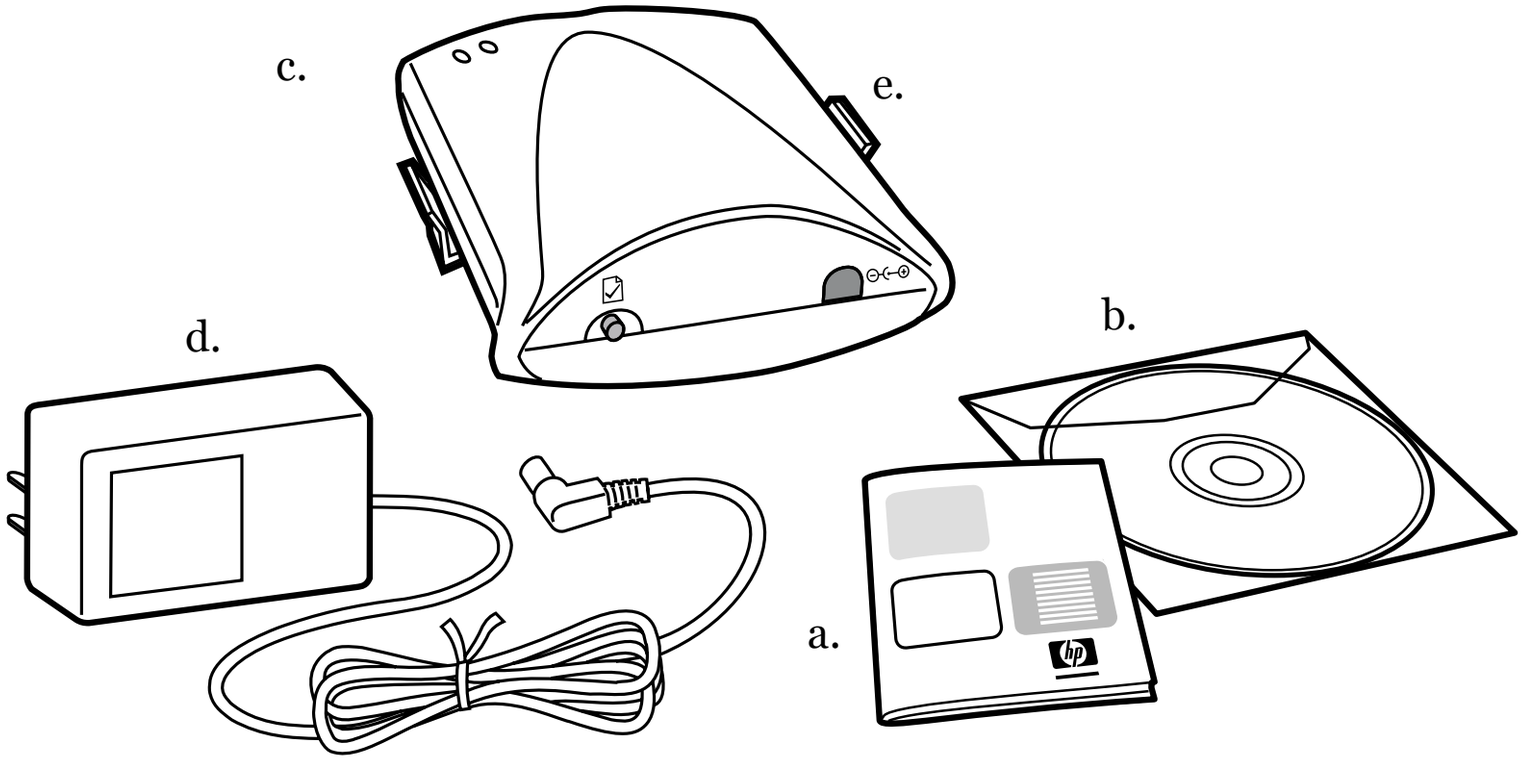
HEWLETT-PACKARD LIMITED GLOBAL WARRANTY STATEMENT D-1
Local warranty statements D-3
Getting Warranty Service D-4

Introduction

Thanks for purchasing the HP Jetdirect wireless print server!

When installoed in your printer, the HP Jetdirect wireless print server turns your printer into a *wireless Ethernet printer* on your Ethernet network.

What's in the Box



a. setup instructions

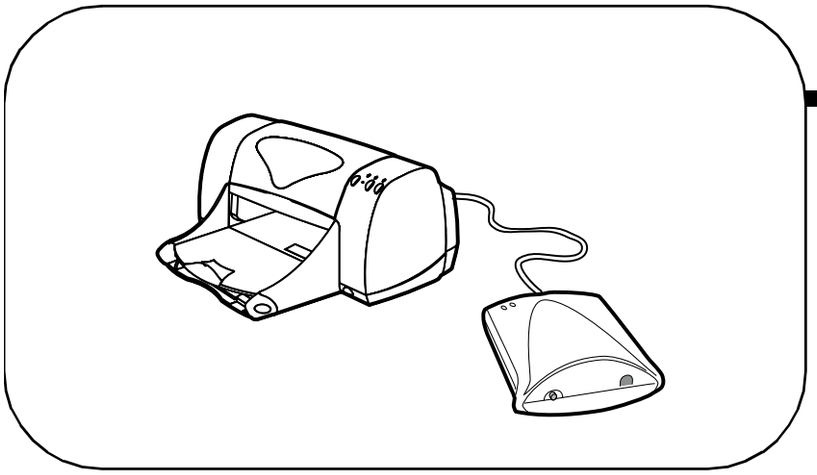
b. HP Jetdirect CD-ROM, with setup software and additional documentation

c. HP Jetdirect 380x 802.11b Wireless External Print Server (USB)

d. AC/DC power adapter

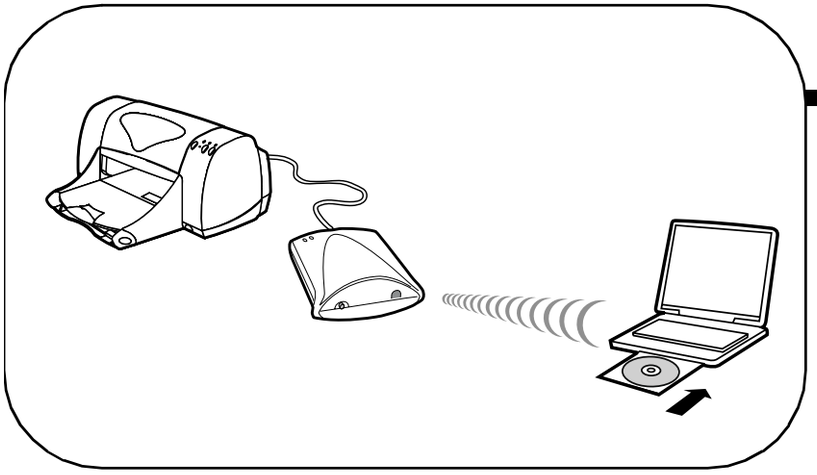
e. optional mounting clip

For the Details...



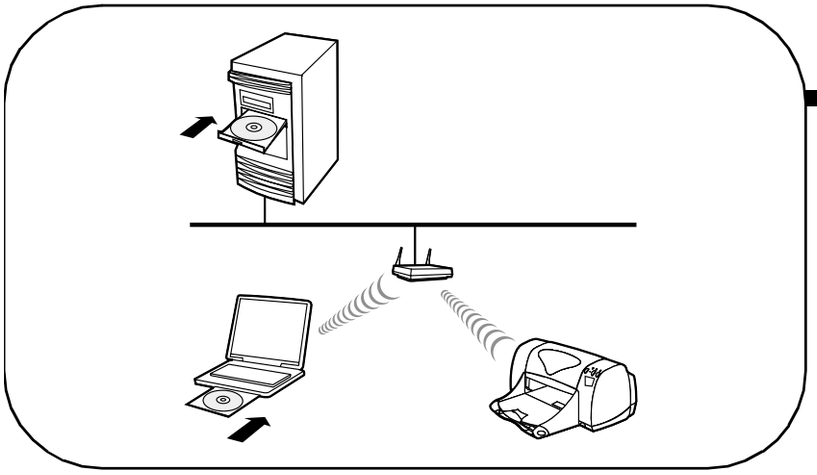
chapter 2

to connect the print server to the printer



chapter 3

to configure your network's wireless settings on the print server



chapter 4

to install the printer on your network servers or systems

What You Need to Supply

✓ a supported Microsoft Windows or Apple Macintosh computer with an 802.11b Wireless LAN (WLAN) interface card installed

- Microsoft Windows 95/98, Me, NT 4.0, 2000
- Apple Mac OS 8.6 and later

This wireless computer is needed to set up a wireless connection from your printer to your network.

✓ an access point (for wireless *infrastructure* mode only)

In *infrastructure* mode, an access point is a device that connects wireless devices, such as a wireless network printer, to your cabled network. For more information, see "Wireless LAN Terms and Concepts" on page 1-4.

✓ (Windows systems) the printer's software driver for your Windows system

When using the HP Jetdirect CD-ROM to install a network printer, you will need the software driver for your printer. You can obtain your printer driver from one of the following sources:

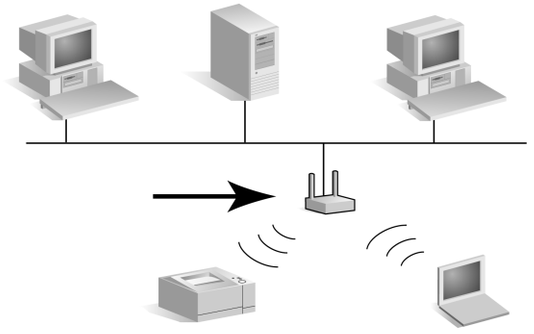
- The printing system CD-ROM supplied with your printer
- The HP support Web site: `http://www.hp.com/go/support`
- The automated driver download feature of the HP Install Network Printer wizard on the HP Jetdirect CD-ROM. (If you have Internet access, the printer installation software on the HP Jetdirect CD-ROM can automatically download and install the printer driver. For more information, see chapter 4.

  The HP Install Network Printer wizard requires a printer driver file with the appropriate extension (`*.inf`) to complete the installation. The applicable drivers are commonly referred to as the "Add Printer" drivers or the "Corporate User" printer drivers.

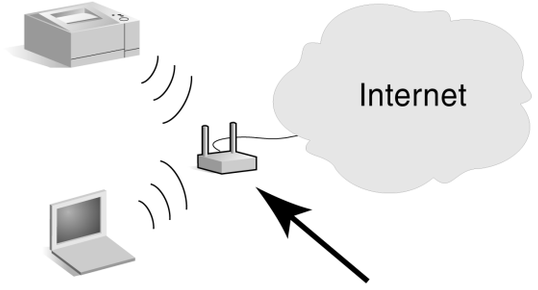
Wireless LAN Terms and Concepts

Access Point

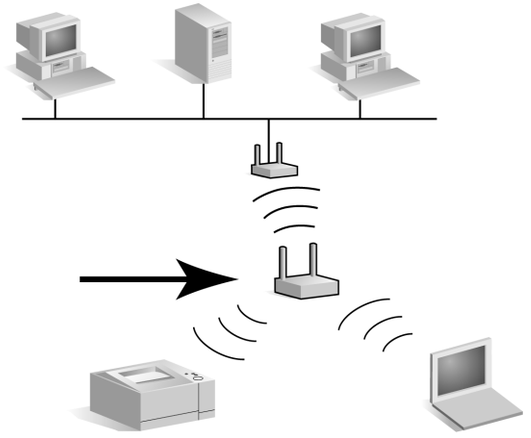
An access point is a device that typically serves as a bridge or gateway between wireless devices and the devices on a cabled network. An access point must be able to receive and forward network traffic between wireless and cabled network devices. Multiple access points can act as repeaters to extend the range of a wireless network.



Access Point in Enterprise Workgroup



Residential Gateway as Access Point

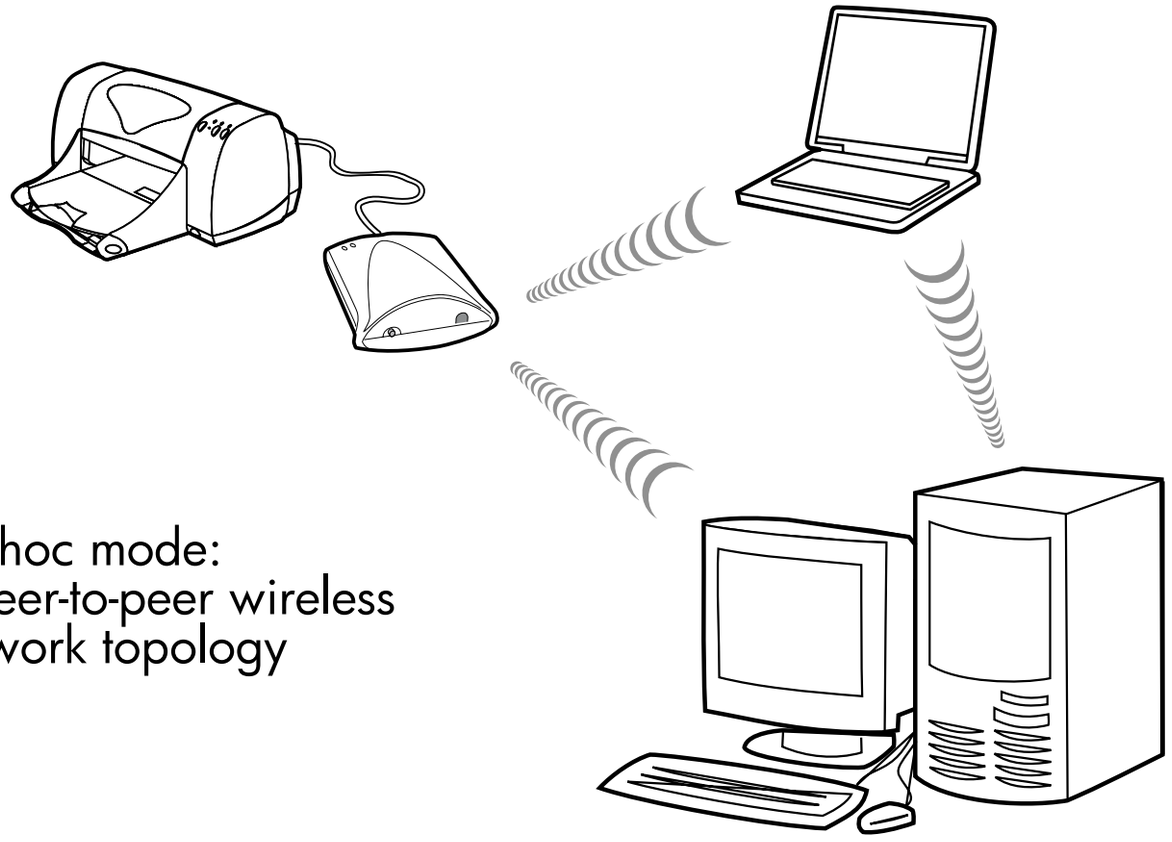


Access Point as Wireless Repeater

Ad Hoc (Peer-to-Peer) Mode

Ad hoc mode (or peer-to-peer mode) is a wireless network topology where wireless devices communicate with each other directly. An access point is not used. On Apple networks, *ad hoc* mode is called “computer-to-computer” mode.

When set in this mode, the print server receives print jobs from wireless computers directly.



Ad hoc mode:
a peer-to-peer wireless
network topology

Note *Ad hoc* “peer-to-peer” mode is a wireless topology where wireless devices communicate directly. HP Jetdirect “peer-to-peer” printing refers to a network client’s direct print path to a printer. HP Jetdirect peer-to-peer printing may be used on both *ad hoc* or *infractructure* wireless modes.

Authentication

Authentication is used to validate the identification of each device or computer that is attempting to access a network. The authentication method used on a network is determined during network design and depends on the network security requirements. Consequently, authentication methods are closely associated with encryption options that are also used on the network.

HP Jetdirect wireless print servers support the following authentication methods:

- **Open System.** Authentication is not used, virtually allowing open access to a device. Encryption may or may not be used, depending on the need for data security.
- **Shared Key.** Authentication is based on a secret, common WEP key that must be configured on each device. A device that does not have the proper WEP key cannot access the network.
- **RADIUS using MD5.** RADIUS (Remote Authentication Dial In User Service, RFC 2138) servers are used to receive client connection requests and authenticate the client. This authentication method uses 802.1x EAP (Extensible Authentication Protocol) and MD5 (Message-Digest Algorithm 5, RFC 1321). A User Name and Password must be configured on the device. If the network's access point uses WEP keys, then the WEP key must also be configured on the device.
- **RADIUS using TLS.** RADIUS (Remote Authentication Dial In User Service, RFC 2138) servers are used to receive client connection requests and authenticate the client. This authentication method uses 802.1x EAP-TLS (Extensible Authentication Protocol—Transport Layer Security, RFC 2716). This authentication method requires that an X.509-compliant digital certificate be installed on the device. In addition, dynamic WEP keys under the control of the authentication server are used and must be supported by the access point.

Channels

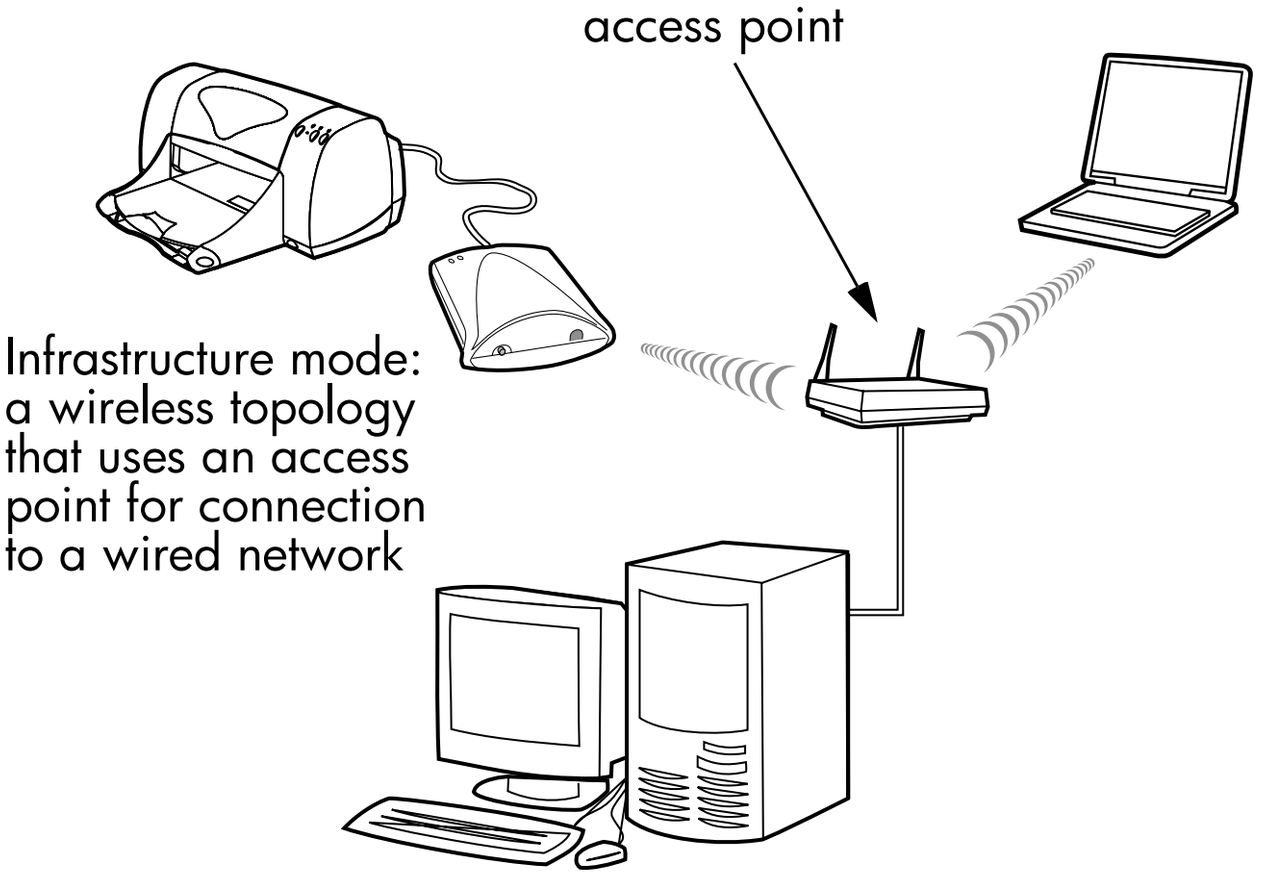
IEEE 802.11 standards for wireless LANs specify a spectrum of radio waves for wireless communications. The allowed spectrum is divided into channels consisting of 22 MHz each. The number of available channels may be restricted based on your location (see the appendices).

When shipped from the factory, the HP Jetdirect print server is configured for *ad hoc* mode operation using channel 10. In most cases, manual configuration of the channel is not required.

- If the print server is powered on and discovers a wireless device whose SSID (network name) is also `hpsetup`, it will automatically adjust its channel to match that network.
- If the print server is reconfigured for *infrastructure* mode, it will automatically adjust its channel to match the access point.

Infrastructure Mode

Infrastructure mode is a wireless network topology where all wireless communications goes through an access point. *Infrastructure* mode is called a Basic Service Set (BSS), and sometimes referred to as “enterprise mode”. On Apple networks, *infrastructure* mode is called “Airport Network” mode. When set in this mode, the HP Jetdirect print server receives print jobs from wireless and cabled network computers through an access point.



Service Set Identifiers (SSID)

An SSID is a logical name assigned to a wireless LAN. It is typically used to provide access control onto a LAN. For example, if the SSID for a wireless network is “mycompany”, then each wireless device on this network must be configured with this SSID.

In *infrastructure* mode, the access point will require wireless devices to be configured with the appropriate SSID before network access is allowed.

Signal Range

The range over which wireless devices can communicate depends on the physical environment and the orientation of the HP Jetdirect print server.

In general, while radio waves can bounce off obstacles to access print servers, it is best to have clear line-of-sight access between devices without obstacles through which the signal must pass. The range is typically 100 feet at the highest data rate (11 Mbps), and 300 feet at the lowest data rate (1 Mbps).

Note Signal range and wireless transmission performance is reduced with increasing distance between devices, and with obstacles that block or absorb signals.

Wired Equivalent Privacy (WEP) Keys

Wired equivalent privacy (WEP) encryption provides a level of data security for wireless networks using encryption keys. To use WEP, wireless devices on a network must be configured with a common WEP encryption key to be able to communicate with each other. Because the WEP key is used by each wireless device, it is typically called a "shared key".

Note WEP encryption levels are sometimes called "40-bit", "64-bit", "104-bit" or "128-bit" encryption. "40-bit" and "64-bit" are identical, as are "104-bit" and "128-bit". When entering WEP keys, the user specifies 40 bits for 64-bit encryption, or 104 bits for 128-bit encryption. An additional 24 "initialization vector" (IV) bits are automatically added for a total of 64 bits and 128 bits, respectively. In this guide, we will use "40/64-bit" and "104/128-bit" to specify these WEP encryption levels.

By factory default, WEP encryption keys are not set on the HP Jetdirect print server. The print server supports configuration of either 40/64-bit or 104/128-bit encryption keys. In addition, up to four WEP encryption keys can be configured, although only one can be selected for transmission at a time.

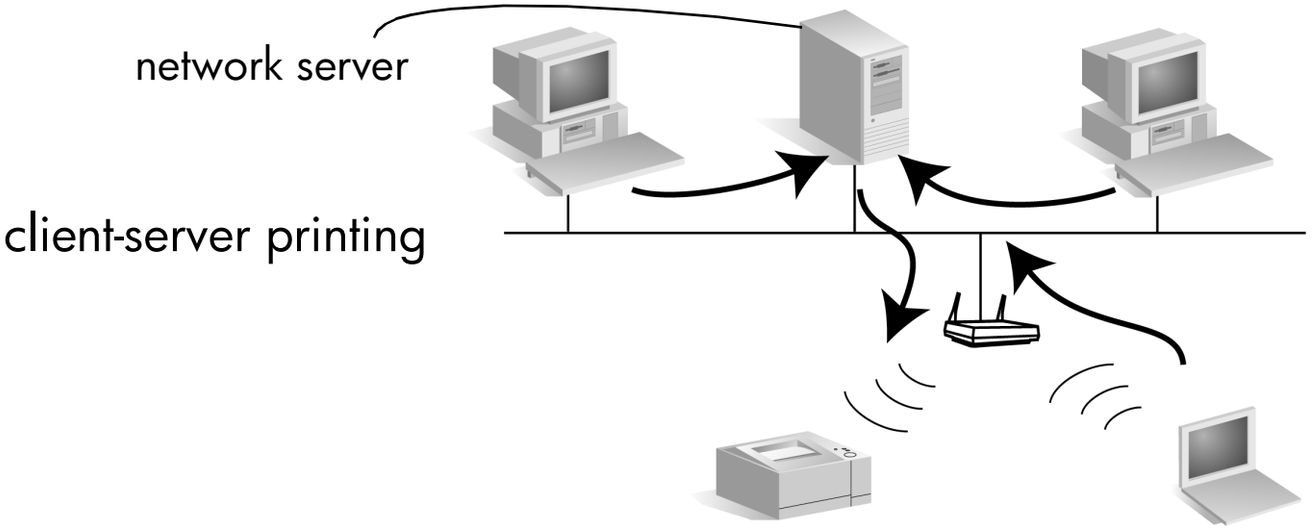
For typical networks, WEP keys are considered *static* because they remain the same unless manually reconfigured. For example, on a typical *infrastructure* mode network that uses WEP encryption, a change to the WEP key on an access point will require a manual change to the WEP key on each wireless device. However, on highly-secure advanced networks that use authentication servers for network access, the WEP keys used may be *dynamic*, because they are routinely changed automatically, making them difficult to decipher.

Note Wireless performance is reduced when WEP encryption is enabled, due to the additional processing time required.

Network Printing Terms and Concepts

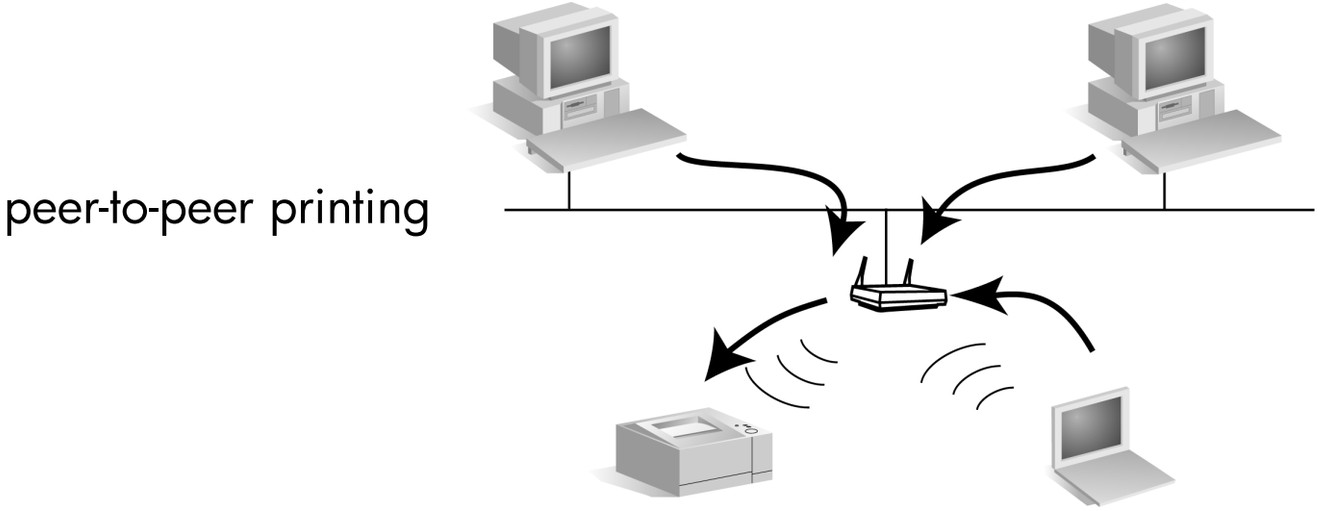
Client-Server Printing

On a client-server network, client computers send print jobs to a dedicated network server that controls the use of each installed printer. The HP Jetdirect print server receives print jobs over the network under the network server's control, or can automatically monitor print queues and de-spool print jobs from the network server.



Peer-to-Peer (Direct Mode) Printing

On a peer-to-peer network, dedicated network servers are not use. Instead, an HP Jetdirect-connected network printer is installed on each client computer that will send print jobs directly to the printer.



Network Protocols

For network computers and printers to communicate on a network, they must use a common language, or "network protocol". The HP Jetdirect print server can support many different network protocols simultaneously, such as TCP/IP (Transmission Control Protocol/Internet Protocol) and IPX (Internet Packet Exchange). For a list of supported protocols, see page C-2, "Supported Network Operating Systems and Protocols".

Network Address

Each device on a network must be identified by a unique network address for the specific network protocol used. On an IPX network, the network address is assigned automatically. On an IP network, configuration and assignment of IP addresses and other IP settings are a bit more complex. Network addresses are configured and stored on each HP Jetdirect print server during installation, and are listed on the HP Jetdirect configuration page for the print server.

Hardware Address

Each device on a network contains a unique LAN hardware (or "station") address that is assigned by the manufacturer of the device. Because HP Jetdirect print servers connect printers to a network, each print server contains a LAN hardware address assigned by Hewlett-Packard.

The address consists of 12 hexadecimal digits (0 through F). The first 6 digits uniquely identify the manufacturer, and the second 6 digits uniquely identify the device.

The LAN hardware address is important because it may be needed to identify the printer during installation. It is listed on the HP Jetdirect configuration page for each print server. In addition, it is listed on a label attached to the print server.

If You Need Help...

For advanced topics or more information, see the documentation supplied electronically on the HP Jetdirect CD-ROM.

For release notes, see the "Readme" file in the root directory of the HP Jetdirect CD-ROM.

For web-based or direct phone support, refer to the HP support information in appendix A, "Getting Support and Service".

Note For phone support in the USA, call HP support at:

(208) 323-2551

For phone support worldwide, see appendix A, "Getting Support and Service". For the latest HP support telephone numbers and available services worldwide, visit:

`http://www.hp.com/support/support_assistance`

Installing the Print Server Hardware

Steps to Install the Hardware

1. Get the printer ready to attach to the network:
   - If the printer is already set up:

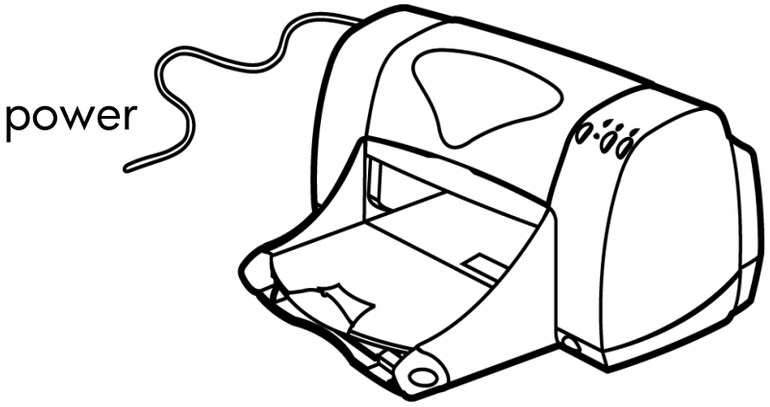
     Switch off the printer. Detach it from any computer.
     Switch the printer on again, and proceed to step 2.
   - If the printer is *not* already set up:

     Assemble its hardware only—paper tray, cartridges, power cord—using the instructions supplied with it.

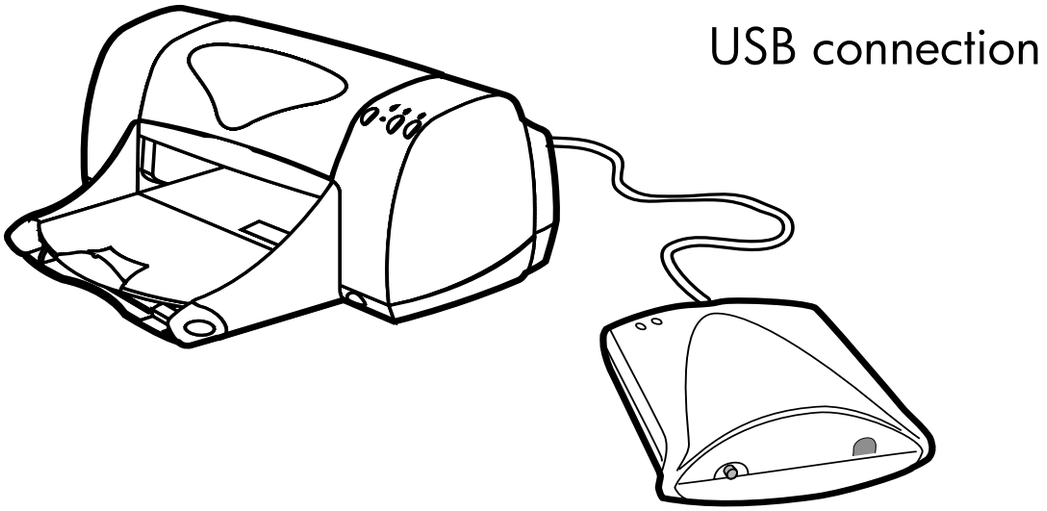
     Set aside the printer CD; do not install its software yet.

     Do *not* attach the printer to your computer.

     Switch on the printer, and print a test page, if available, according to the instructions supplied with it.



2. Attach the print server to the printer by plugging the Universal Serial Bus (USB) cable—shipped with the print server—into the USB connector on the front end of the print server and into the USB connector on the printer.

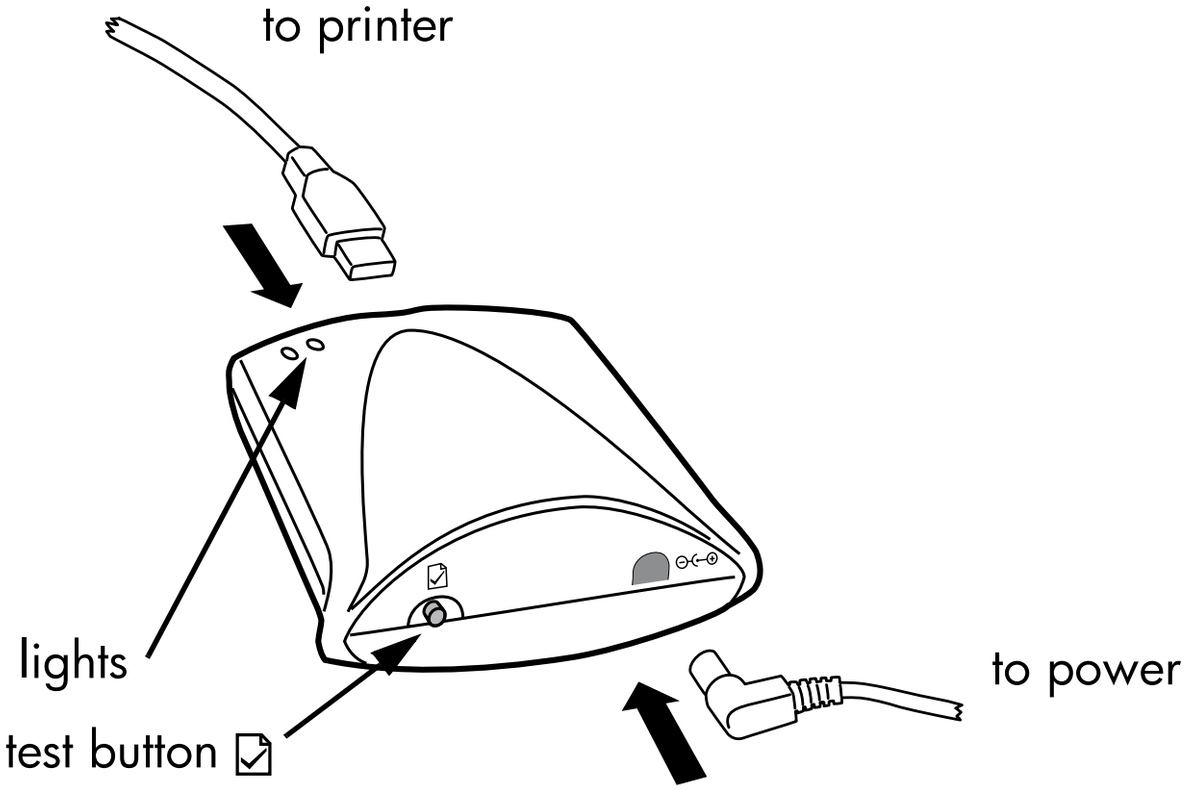


Caution

Unsupported USB Devices:

- an HP 4135A Jetdirect Connectivity Card
- any USB hub any USB-to-parallel converter
- any USB cable extender

3. Plug the DC power cord from the power module—shipped with the print server—into the power connector on the rear end of the print server. Plug the power module into a power outlet.



4. Wait two minutes for the print server to initialize, and then verify the connection with

the printer by printing a configuration (test) page:

Briefly press and release the test button on the rear end of the print server (illustrated above on page 2-3). The page should soon emerge from the attached printer.

HP JetDirect Configuration Page (English – HPGL2)

status entry

```
--------- General Information  ------------
Status:                       I/O Card Ready

Model Number:                          J6061A
Hardware Address:                0001E6123456
Firmware Version:                      Q.23.01
Port Config:                           802.11b
Manufacturing ID:              40194019F090F
Date Manufactured:                     02/2002

USB Printer 1 -----------------------------
Device Name:                     LaserJet 3320
Manufacturer:                  Hewlett-Packard
Serial Number:                       US16SK0KD
Communication Mode:                IEEE 1284.4

---------- 802.11b Wireless   -------------
Status:                              Scanning

Communication Mode:                   Ad Hoc
Network Name (SSID):                  hpsetup
Signal Strength:               Not Applicable
Access Point / BSSID:            00022D4147E3
Channel:                                   10
Authentication Type:               Open System
Encryption Type:                         None
Total Packets Transmitted:                 42
Total Packets Received:                     1

---------- Security Settings -------------`
Admin Password:                Not Specified
SSL/TLS:                             Disabled
Cert Expires:                  Not Applicable
SNMP Versions:                           1;2
SNMP Set Cmty Name:            Not Specified
Access List:                   Not Specified

---------------- TCP/IP  ------------------
Status:                                   40
  ARP DUPLICATE IP ADDRESS
  00:c0:6f:03:99:79
Host Name:                     Not Specified
IP Address:                      192.0.0.192
Subnet Mask:                   255.255.255.0
Default Gateway:                 192.0.0.192
Config By:                        Default IP
DHCP Server:                     192.168.0.1
TFTP Server:                   Not Specified
Config File: ..client/stand/uxboot/card.cfg
Domain Name:                   Not Specified
DNS Server:                    Not Specified
WINS Server:                   Not Specified
Syslog Server:                 Not Specified

--------------- IPX/SPX  -----------------
Status:                           Initializing

Primary Frame Type:                Auto Select

Network    Frame Type                    Rcvd
Unknown    EN_II                            2
0000C400   EN_802.2                    31903
Unknown    EN_SNAP                          2
Unknown    EN_802.3                         2

------------ Novell/NetWare  -------------
Status:                                     16
  NOT CONFIGURED
Node Name:                             NPI12345
NetWare Mode:                      Queue Server
NDS Tree Name:

NDS Context:

Attached Server:

SAP Interval:                            60 sec




-------------- AppleTalk  -----------------
Status:                           Initializing

Name:
Zone:                                        *
Type 1:                            HP LaserJet
Type 2:                            LaserWriter
Network Number:                          65281
Node Number:                                 4

--------------- DLC/LLC  -----------------
Status:                                   Ready
```

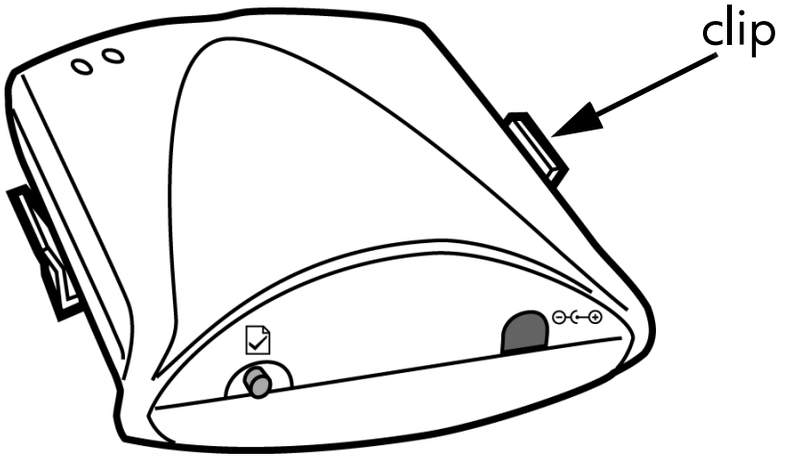
Note If the page does not appear on the printer, or if it is unreadable, see page 5-4.

Check on the page that the print server status is "I/O Card Ready". The Status entry is the first entry in the General Information section, in the upper left portion of the page.

Since the print server is not yet fully installed (until you complete the procedures in chapters 3 and 4), some parameters such as the IP address will not reflect their final operating status.

Note To interpret entries and diagnose problems reported on the configuration page, see the *Administrator's Guide, HP Jetdirect Print Server (Models 610n/615n/680n/380x)* on the HP Jetdirect CD-ROM provided with the print server.

5. *Optional:*
   You can use the clip attached to the bottom of the print server to mount it to the printer or to a table or wall. Use either the supplied sticky tape or the mounting screw holes. Or you can pull off the clip.



3

Making a Wireless Network Connection

Before You Begin...

This chapter describes how to configure the HP Jetdirect print server with a wireless network connection to your network. Similar to connecting a network cable, a wireless network connection is required before you can discover and install the printer on your network systems. To configure a wireless connection, you must have a supported wireless computer.

Verify the following:

- You have a wireless computer with one of the following operating systems:
  - Microsoft Windows 9x, Me, NT 4.0, 2000, XP
  - Apple Mac OS 8.6, 9.x, X 10.1 or greater
- Your system's wireless configuration utility and interface card are working properly.
- You have installed the HP Jetdirect print server hardware and have printed a Jetdirect configuration page.
- (*infrastructure mode only*) The access point on your network is operating properly.

Note After setting up a wireless network connection, use caution when resetting the print server to factory-defaults. The network connection will be lost, and you will need to reconfigure the print server. See also page 5-14.

Factory-Default Wireless Settings

Parameter	Setting	Comments
Communications Mode	Ad Hoc	If your network uses an access point, you must reconfigure the Communications Mode of the HP Jetdirect print server to “Infrastructure”.
Channel	10	(*Ad hoc* mode only) This specifies the broadcast channel if the print server fails to connect to a network. In most cases, you will *not* need to change this setting. The print server will scan all available channels for the specified network and will adapt its channel to the one detected.
Network Name (SSID)	hpsetup	You must change the SSID on the print server to match your network. In *infrastructure* mode, you must match the SSID configured on the access point.
Authentication	Open System	The HP Jetdirect print server is not configured for network authentication. If required by your network, the proper authentication method must be configured on the HP Jetdirect print server.
Encryption (WEP)	none	If your network uses WEP encryption keys, you must configure the encryption keys on the print server. You can configure up to four WEP keys. The active key must match the value and active key position (for example, Key 1) configured on other wireless devices.

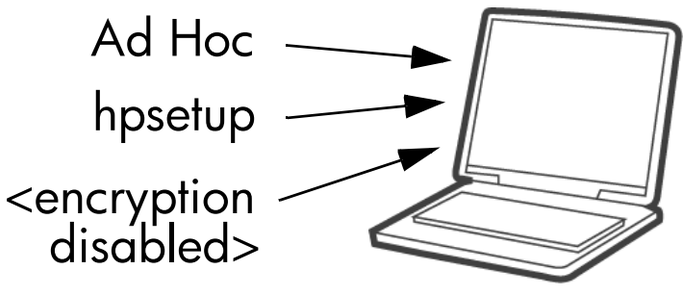
Using a Microsoft Windows Wireless PC

1. Configure your wireless PC to communicate with your new HP Jetdirect print server.

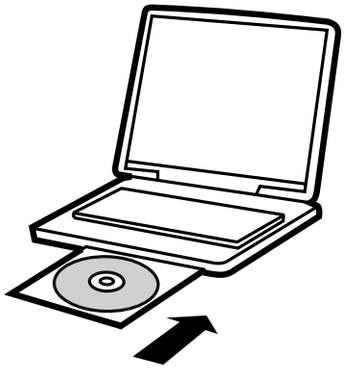
Note Record your settings. If possible, create a new profile to configure the HP Jetdirect print server so that you can maintain your current settings.

Run your wireless interface card's utility and reconfigure your PC with wireless settings that match the factory-default settings of the HP Jetdirect print server.

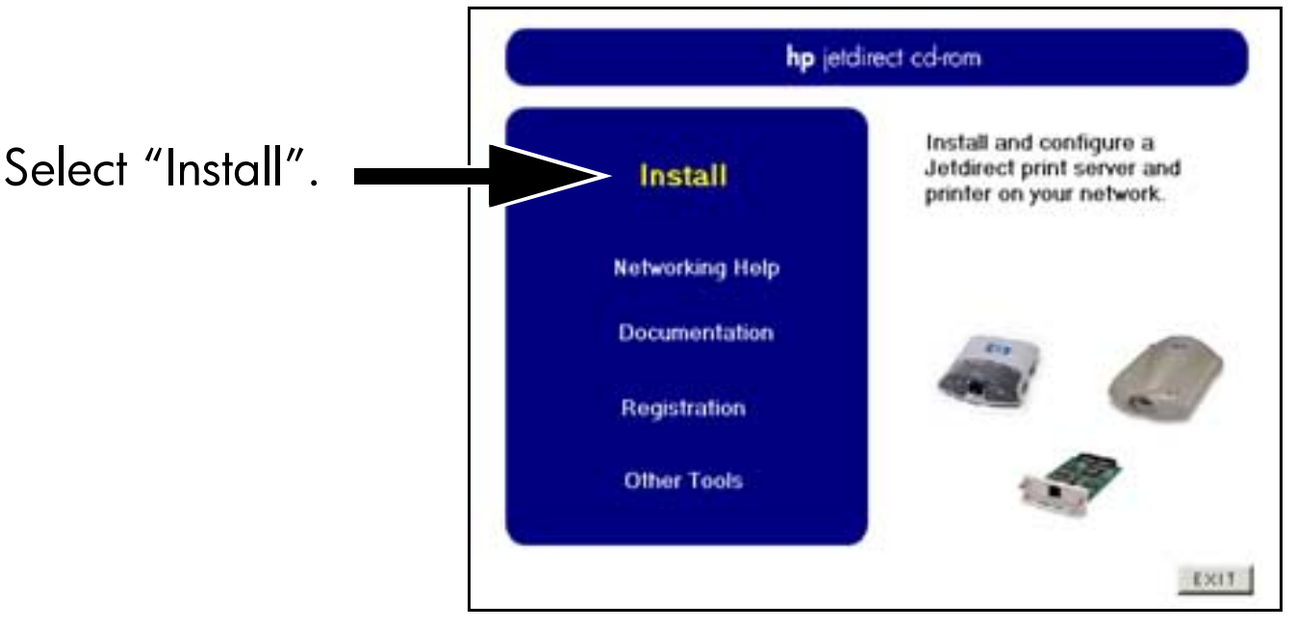
- Communications mode: Ad Hoc (peer-to-peer)
- Network name (SSID): hpsetup
- Encryption: <disabled>



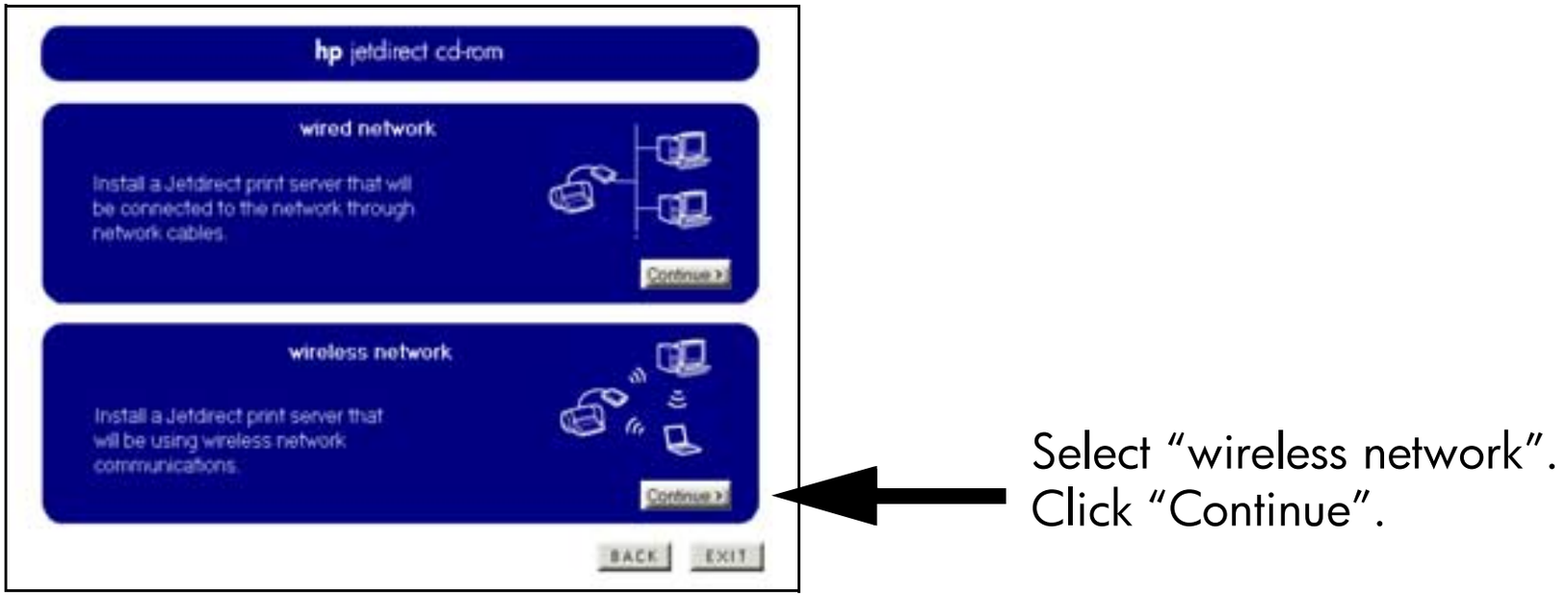
2. Insert the HP Jetdirect CD-ROM into your wireless PC.
3. Wait for the CD-ROM utility to autostart, or run `setup.exe` from your CD-ROM drive.



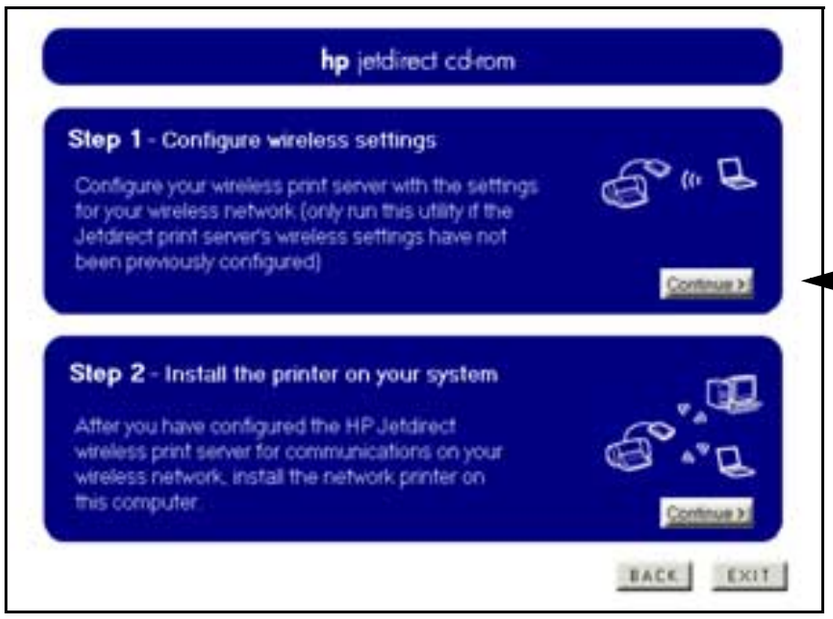
4. When the CD-ROM utility runs, select **Install**.



5. Select **wireless network** and click **Continue.**


hp jetdirect cd-rom
wired network
Install a Jetdirect print server that will be connected to the network through network cables.
Continue >
wireless network
Install a Jetdirect print server that will be using wireless network communications.
Continue >
BACK
EXIT
Select “wireless network”.
Click “Continue”.

6. Select **Configure wireless settings** and click **Continue**. This launches the HP Jetdirect Wireless Setup wizard. Using the instructions and help provided, you will be guided through the wireless connection configuration.


hp jetdirect cd-rom
Step 1 - Configure wireless settings
Configure your wireless print server with the settings for your wireless network (only run this utility if the Jetdirect print server's wireless settings have not been previously configured)
Continue >
Step 2 - Install the printer on your system
After you have configured the HP Jetdirect wireless print server for communications on your wireless network, install the network printer on this computer.
Continue >
BACK
EXIT

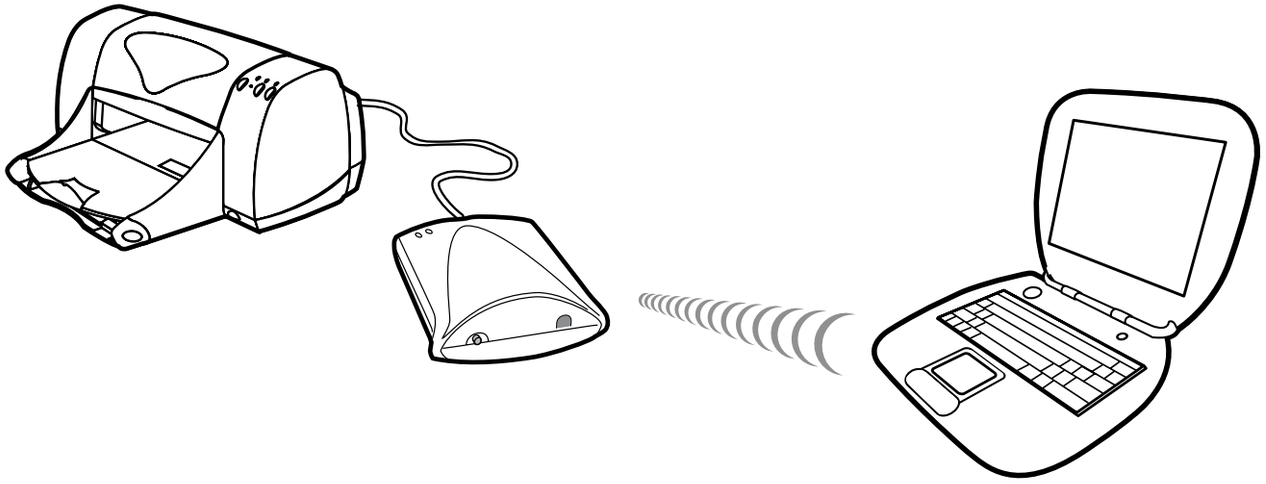
Select "Configure wireless settings". Click "Continue".

7. When you have configured the HP Jetdirect print server with a wireless connection to your network, do the following:
   a. Print a Jetdirect configuration page to confirm your settings. See page 5-4 for the method and for a typical configuration page at this stage of the installation.
   b. Restore your PC to its original wireless configuration (or profile) for your network.
8. You have completed the setup of the wireless connection to your network. You may now install the printer on your network computers or servers. To install the printer, go to chapter 4, "Installing the Printer on a Network System or Server".

   If you are unable to communicate with the printer over your network, go to chapter 5, "Troubleshooting Problems".

Using an Apple Macintosh Wireless Computer

To configure a wireless network connection using an Apple Macintosh wireless computer, refer to the detailed instructions supplied on the HP Jetdirect CD-ROM.



In addition, you may be able to use an optional configuration method described in the next section.

Optional Wireless Connection Setup Methods

Optional methods to configure a wireless network connection include:

Note To use Telnet or the embedded Web server, you must first reconfigure your wireless computer's settings to match the HP Jetdirect factory-default settings, and then create an IP path to the default IP address (192.0.0.192) on the print server. To create an IP path, use one of the following methods:

- If supported, use a "route add" command from your system prompt (see your system help or documentation), or
- Temporarily reconfigure your computer's IP address to match the default IP network of the Jetdirect print server (for example, use 192.0.0.193). You should record your current settings, or if possible, create a new profile for your temporary settings.

- Using a Telnet session with the HP Jetdirect print server to configure selected wireless parameters (not all wireless parameters can be set through Telnet). For more information, use the Telnet help (?) command. Also, refer to the *Administrator's Guide, HP Jetdirect Print Server (Models 610n/615n/680n/380x)* on the HP Jetdirect CD-ROM provided with the print server.
- Using your Web browser to access the embedded Web server on the HP Jetdirect wireless print server. For more information, refer to the *Administrator's Guide, HP Jetdirect Print Server (Models 610n/615n/680n/380x)* on the HP Jetdirect CD-ROM provided with the print server.

  When using the embedded Web server, the wireless settings and TCP/IP settings are performed on different Web pages. Note the following:

- If you configure a static IP address before changing the wireless network settings on the print server, you will be disconnected. You must open a new connection using the new IP address.
- If you change the wireless network settings on the print server before assigning an IP address, your connection will be closed. With the print server now configured with a connection to your network, you must restore your wireless computer's settings to open a new embedded Web server connection.
- If you want the print server to use BootP or DHCP for an IP address, you should configure your wireless network settings first. The factory-default state of the print server is to obtain it's IP configuration using BootP or DHCP.

Installing the Printer on a Network System or Server

Once your printer is connected to your network (wired or wireless), you can install the printer on each computer that will print directly to the printer by using network printer installation software available for your system. This chapter provides information for using the software provided on the HP Jetdirect CD-ROM.

Before You Begin...

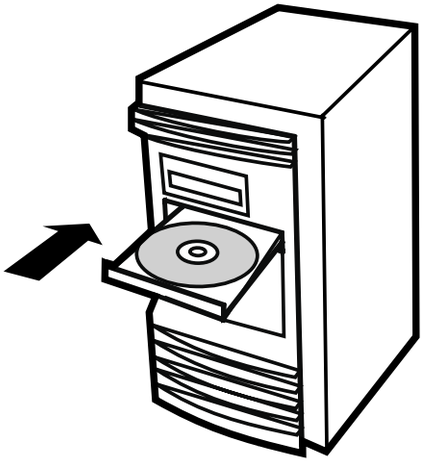
- *Installing the printer may be easier if you use the CD-ROM that came with your printer instead of the HP Jetdirect CD-ROM*. You can use your printer's CD-ROM if it contains network printer installation software integrated with your printer software.

HP printer or peripheral CD-ROM is recommended...	**The HP Jetdirect CD-ROM is recommended...** *
For these USB printer models: • HP LaserJet 1200, 1220, 2200, 3200, 3300 Series • HP color inkjet cp1160, cp1700 • HP deskjet 5550 • HP business inkjet 2600 • HP OfficeJet G series, K-80, K-80xi • and later models listed at: `http://www.hp.com/support/network-printer-CD`	• If your printer or peripheral is not included in the left column. • If you cannot locate your printer or peripheral CD-ROM. • If you prefer to continue using the HP Jetdirect CD-ROM.
*If you use the HP Jetdirect CD-ROM to install MFP or All-in-One devices, some features (other than printing) may not be accessible.	

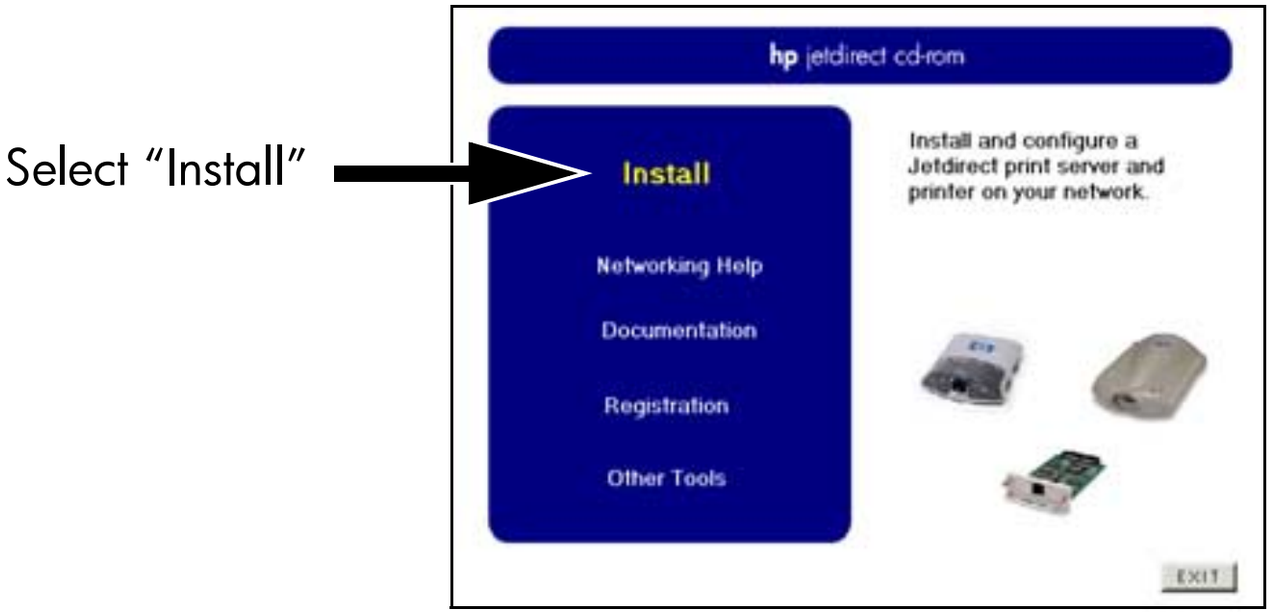
- The HP Jetdirect CD-ROM does not contain printer driver software, which must be available to install and use your printer. The printer driver for your printer may be obtained and installed from the following sources:
  - The printer CD-ROM supplied with your printer
  - HP online support Web site at: `http://www.hp.com/go/support`
  - The automated driver download feature of the HP Install Network Printer wizard on the HP Jetdirect CD-ROM (Internet access must be active when you run the wizard).

Microsoft or Novell NetWare Networks

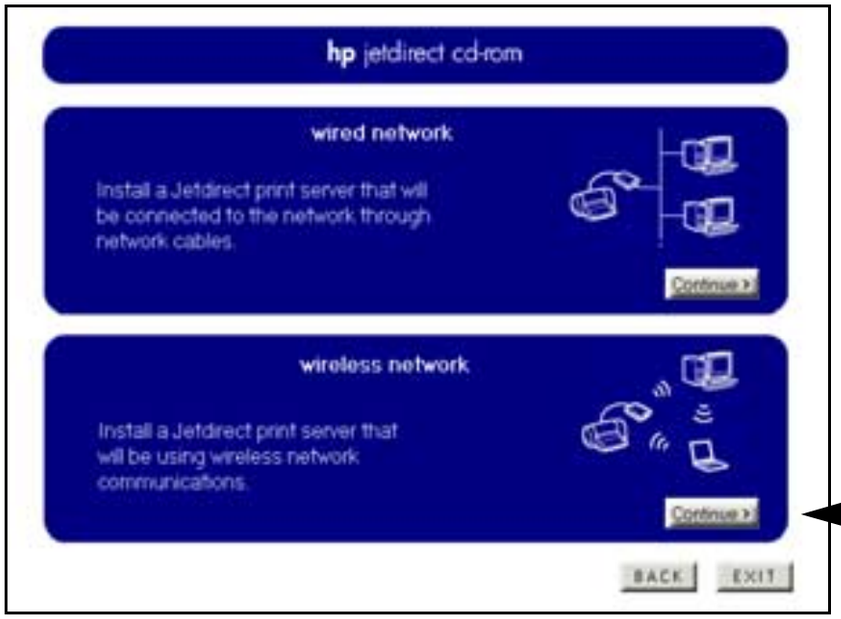
To install the printer on a Windows 95, 98, Me, NT 4.0, 2000, or XP system, run the HP Jetdirect CD-ROM utility:



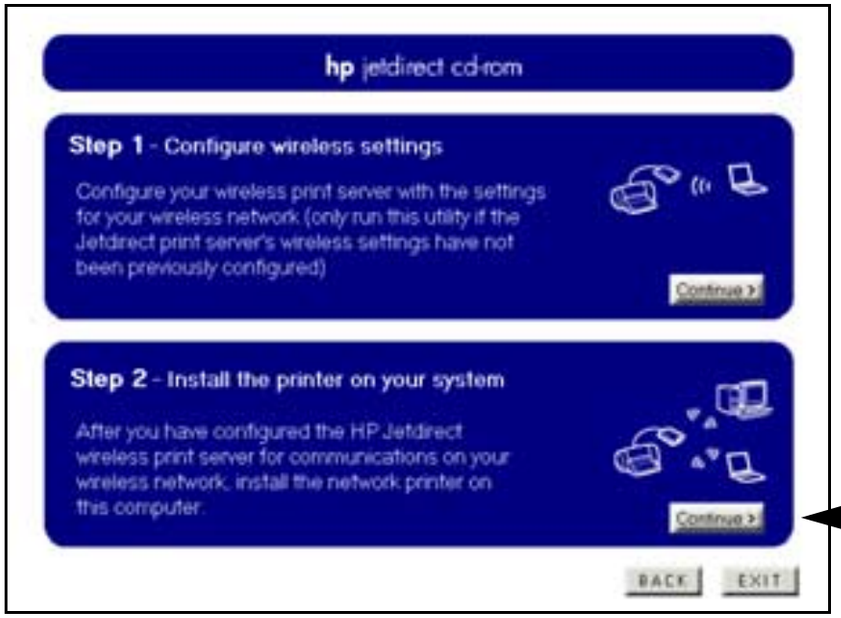
1. Insert the CD-ROM into your CD-ROM drive.
2. Wait for the installation utility to start automatically. If necessary, run `setup.exe` from the root directory of the HP Jetdirect CD-ROM.
3. When the CD-ROM utility runs, select **Install**, as illustrated below.



4. To launch the HP Install Network Printer wizard and install the printer on this system, select **wireless network** and then select **Install the printer on your system**.


hp jetdirect cd-rom
wired network
Install a Jetdirect print server that will be connected to the network through network cables.
Continue >
wireless network
Install a Jetdirect print server that will be using wireless network communications.
Continue >
BACK
EXIT

Select “wireless network”.
Click “Continue”.


hp jetdirect cd-rom
Step 1 - Configure wireless settings
Configure your wireless print server with the settings for your wireless network (only run this utility if the Jetdirect print server's wireless settings have not been previously configured)
Continue >
Step 2 - Install the printer on your system
After you have configured the HP Jetdirect wireless print server for communications on your wireless network, install the network printer on this computer.
Continue >
BACK
EXIT

Select “Install the printer on your system”.
Click “Continue”.

Then follow the instructions displayed on the screens.

5. When prompted, print a Jetdirect configuration page to verify printer setup. See page 5-4 for the method and for a typical configuration page at this stage of the installation.

   If the page successfully prints, then you have completed printer setup on this computer system. (If this system is a server, see "Client-Server Networks" below.)

   If the page fails to print, perform the troubleshooting tasks displayed by the wizard. Click **Help** for more information. In addition, you can select **Networking Help** from the CD-ROM installation utility's main screen.

For troubleshooting information, see chapter 5. For additional information, read the *Administrator's Guide, HP Jetdirect Print Server (Models 610n/615n/680n/380x),* on the HP Jetdirect CD-ROM. For information on accessing documents on the Jetdirect CD-ROM, refer to the section "To View Documents on the CD-ROM" on page 4-7.

Client-Server Networks

After you have set up the printer on the server, you will need to set up your network clients to access the printer through the server. The procedures depend on the available utilities for your particular clients and network operating system.

For example, if the printer was installed and shared on a Microsoft server, each Windows client can use *Add Printer* or *Network Neighborhood* utilities to access the printer.

For more information, refer to the documentation and help supplied with your network operating system.

UNIX Networks

For HP-UX and Sun Solaris systems, use the *HP Jetdirect Printer Installer for UNIX* software provided on the HP Jetdirect CD-ROM. The software is located in the `/UNIX` directory of the CD-ROM.

For detailed installation instructions and other information, read the text and documentation files provided in the `/UNIX` directory of the CD-ROM.

For HP Jetdirect troubleshooting and configuration page messages, read the *Administrator's Guide, HP Jetdirect Print Server (Models 610n/615n/680n/380x),* on the HP Jetdirect CD-ROM. For information on accessing documents on the Jetdirect CD-ROM, refer to the section "To View Documents on the CD-ROM" on page 4-7.

Apple MacOS networks

For printer configuration and management on AppleTalk networks, use the *HP LaserJet Utilities* provided on the HP Jetdirect CD-ROM. To install the software, follow these steps:

1. Insert the CD-ROM into the CD-ROM drive and wait for the HP Jetdirect CD-ROM icon to appear on the screen.
2. Double-click the HP Jetdirect icon to display the items in the Jetdirect window.
3. Double-click the HP LaserJet software installation icon for the language you want. Then follow the instructions on the screen.

To run and use the software, refer to the help files provided with the software. For more information, read the *Administrator's Guide, HP Jetdirect Print Server (Models 610n/615n/680n/380x),* on the HP Jetdirect CD-ROM.

To View Documents on the CD-ROM

Several HP Jetdirect print server documents, including the *Administrator's Guide, HP Jetdirect Print Server (Models 610n/615n/680n/380x)*, are provided on the CD-ROM in Adobe Acrobat Reader format (`*.pdf`). For supported Windows systems, these documents can be accessed through the CD-ROM utility.

1. Insert the CD-ROM into your CD-ROM drive.
2. Wait for the installation utility to start automatically. If necessary, run `setup.exe` from the root directory of the HP Jetdirect CD-ROM.
3. Select **Documentation**. Then select your HP Jetdirect product and browse to the desired documents.

For Adobe Acrobat format (`*.pdf`) documents, Adobe Acrobat Reader 4.0 or greater is required. Adobe Acrobat is available free from Adobe's web site at:

`http://www.adobe.com/products/acrobat/readstep.html`

Note For other supported operating systems, you can access the documentation files directly from the `\docs` directory on the CD-ROM. For Adobe Acrobat format (`*.pdf`) documents, the Adobe Acrobat Reader for your system must be installed and available on your system.

If you have difficulty viewing `*.pdf` documents, upgrade to the latest released version of Acrobat Reader available from Adobe Systems Incorporated.

Documents provided in PDF format on the HP Jetdirect CD-ROM are compatible with screen readers used for accessibility.

Troubleshooting Problems

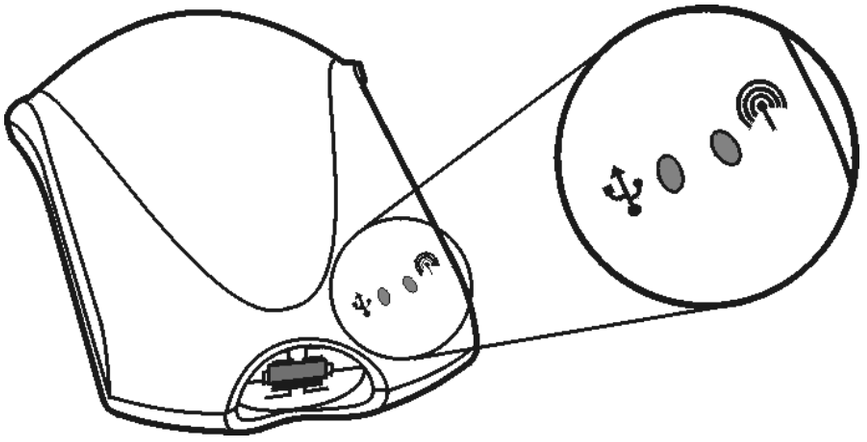
This chapter contains diagnostics, symptoms, tips, and procedures to fix problems with the HP Jetdirect print server:

- Diagnostic tools
  Use the following tools for general troubleshooting:
  - Status lights (LEDs) page 5-2
  - Configuration page page 5-4
- Tips and problem symptoms
  - Unable to communicate with wireless print server page 5-8
  - Weak or failing signal page 5-10
  - Unable to communicate after security configuration change page 5-8
  - Unable to print readable configuration page page 5-4
  - Different configured channel shown on configuration page page 5-7
  - Firmware upgrade disrupted page 5-12
- Procedures to fix problems
  - Resetting the print server (cold reset) page 5-14

More extensive information on troubleshooting is in the *Administrator's Guide, HP Jetdirect Print Server (Models 610n/615n/680n/380x),* on the HP Jetdirect CD-ROM provided with the print server.

Status Light (LED) Indications

If you're not sure of the status of your print server, check the lights on top.



Wireless/Status Light

Behavior	Description
Off	Print server is not receiving power.
On solid: —green —yellow	Print server is on and connected: —OK signal strength (2–5) in infrastructure mode, or ad hoc mode. —Poor signal strength (1); see page 5-8.
Blinking slowly —green	Print server receiving power but not ready; self-test may be in process. Or, no wireless signal detected; see page 5-8.
Blinking slowly —amber	Fault occurred during self-test or operation. Contact HP; see page A-1.
Blinking quickly (green or yellow)	Print server is processing the configuration page.
Flickering: —green —yellow	Indicates network activity: —OK signal strength (2–5) in infrastructure mode, or ad hoc mode. —Poor signal strength (1); see page 5-8.

USB ⇳ Light

Behavior	Description
Off	USB is not operational. This is OK before the print server finishes starting up. After startup completes, this could indicate a faulty print server.
On solid green	USB is enabled and ready for use. This begins before the USB cable is connected.
Blinking —green	Software fault occurred for the firmware. There is a valid USB device and connections, but the device is not supported. Make sure the attached device is a printer.
Blinking —amber	Might be a hardware fault (for example, a short-circuit, faulty cable, or a printer drawing too much power). To verify, disconnect the USB cable at the print server. Switch on the printer if it is off. Power cycle the print server (unplug it and plug it back in). Then reconnect the USB cable. If the USB light is now green and steady, then no problem remains. Otherwise, if the USB light is still blinking amber, then there may be a faulty component. Try these steps to determine which component might be causing the problem: ● Detach the USB cable and power cycle the print server (unplug it and plug it back in). If the USB light is green and steady, then the print server is OK. If it is blinking amber, then the print server is faulty. ● Try reconnecting the USB cable to the print server only, and power cycle the print server (unplug it and plug it back in). If the USB light is green and steady, then the cable is also OK. If it is blinking amber, then the cable may be faulty. ● Power cycle the printer and reconnect the USB cable to the printer. If the USB light is green and steady, then the printer is also OK. If it is blinking amber, then the printer may be faulty.

Configuration (Test) Page

The HP Jetdirect print server configuration page displays network status, configuration, statistics, and error messages.

Briefly press and release the test button ☑ on the rear end of the print server (illustrated on page 2-3). The page should soon emerge from the attached printer.

On the next page is an example of a configuration page printed after the print server is fully installed. See page 2-3 for an example before installation is complete. To interpret entries and diagnose problems reported on the page, see the *Administrator's Guide (Models 610n/615n/680n/380x)* on the HP Jetdirect CD-ROM provided with the print server.

If the Configuration Page Does Not Print, or is Unreadable

If the configuration page does not print successfully (as described on page5-4), try the steps below. If the page prints but is unreadable, note step 4 particularly.

1. Make sure your printer is connected to your print server by a USB A-to-B cable. (This is the standard USB cable.) Make sure that the cable is connected firmly to both the printer and the print server; fully inserting the plug into the print server takes more force than most USB connections.

Note That the print server does not support parallel-to-USB converters (for connecting a parallel printer to a USB host); it works with USB printers only.

2. Make sure that the printer and the print server are powered on.
3. Make sure that the printer is "Online" or "Ready".

(continued on page 5-6)

HP JetDirect Configuration Page (English – HPGL2)

```
--------- General Information  -----------
Status:                      I/O Card Ready

Model Number:                        J6061A
Hardware Address:              0001E6123456
Firmware Version:                    Q.23.01
Port Config:                         802.11b
Manufacturing ID:              40194019F090F
Date Manufactured:                   02/2002

USB Printer 1 -----------------------------
Device Name:                   LaserJet 3320
Manufacturer:                Hewlett-Packard
Serial Number:                     US16SK0KD
Communication Mode:                  1284.4

---------- 802.11b Wireless   -------------
Status:                              Ready

Communication Mode:           Infrastructure
Network Name (SSID):      jetdirect air lan
Signal Strength:                  Excellent
Access Point / BSSID:          00022D4147E3
Channel:                                 10
Authentication Type:             Open System
Encryption Type:                 128-bit WEP
Total Packets Transmitted:                90
Total Packets Received:                 1756

---------- Security Settings -------------`
Admin Password:                      Not Set
SSL/TLS:                  CN:mfg48.corp.com
Cert Expires:          2002-07-09 13:44 UTC
SNMP Versions:                         1,2
SNMP Set Cmty Name:            Not Specified
Access List:                   Not Specified

---------------- TCP/IP  ------------------
Status:                              Ready


Host Name:                         NPI39BEB2
IP Address:                      192.168.0.6
Subnet Mask:                   255.255.255.0
Default Gateway:                 192.168.0.1
Config By:                         DHCP/TFTP
DHCP Server:                     192.168.0.1
TFTP Server:                   Not Specified
Config File: ..client/stand/uxboot/card.cfg
Domain Name:                   Not Specified
DNS Server:                      192.168.0.2
WINS Server:                     192.168.0.1
Syslog Server:                 Not Specified
Idle Timeout:                        270 sec
Web JetAdmin URL:              Not Specified

--------------- IPX/SPX  -----------------
Status:                              Ready

Primary Frame Type:               Auto Select

Network    Frame Type                  Rcvd
Unknown    EN_II                          2
0000C400   EN_802.2                   31903
Unknown    EN_SNAP                        2
Unknown    EN_802.3                       2

------------ Novell/NetWare  -------------
Status:                              Ready

Node Name:                         NPI12345
NetWare Mode:                   Queue Server
NDS Tree Name:                      YES-TREE

NDS Context:                           0=HP

Attached Server:                     N1[NSQ]

SAP Interval:                         60 sec

Server 1 [nds]                           N4
Server 2 [nds]                           N5

-------------- AppleTalk  -----------------
Status:                              Ready

Name:                HP LaserJet 3300 Series
Zone:                             Saturn Zone
Type 1:                           LaserWriter
Type 2:                           HP LaserJet
Network Number:                        65281
Node Number:                               4

--------------- DLC/LLC  -----------------
Status:                              Ready
```

4. You can check other printer languages (PDL) in case the print server is sending the page in a PDL that the printer does not support. If the PDL is not supported by the printer, the page will not print or will be unreadable if it does print.

   By default, the print server is configured to determine the appropriate printer language automatically. It is possible that the print server is not able to determine automatically which language it should use for your printer.

   You can cycle through the 4 printer languages using the following procedure:

   a. Press and hold the print server's test button ☑.
      After about 3 seconds, the wireless/status light changes to amber.
      Continue to hold the button until wireless/status light is blinking green.
      Then release the button.

   b. Briefly press and release the test button ☑ again to request the configuration page in the next language.

   c. Verify that a readable page is printed. Repeat these steps up to four times if necessary to receive a configuration page you can read.

   If you still cannot read the page, refer to your printer documentation to find out which of the following 4 printer languages are supported by your printer:
   ASCII, PCL, PostScript, HP/GL-2

5. Try re-initializing the connection between the printer and the print server by cycling power on the print server. While the printer is switched *on*, unplug the power cable from the print server and then plug it back in.

Different Configured Channel Shown on Configuration Page

Ad hoc mode only:

The HP configuration tools allow you to select channel 10 (default) or 11 on the print server. This channel is only used by the print server to broadcast its Network Name (SSID) if it fails to detect and join an existing wireless network. If it is able to join a network, it will reconfigure its channel to the one used by the network.

The configuration page will identify the network channel actually being used on a network. It does not show the broadcast channel used when a network is not detected.

Unable to Communicate with the Wireless Print Server

—During Initial Setup:

Verify the following:

- Your wireless computer is configured to match the default wireless network settings on the print server:
  - Communication Mode: `Ad Hoc`
  - Network Name (SSID): `hpsetup`
  - Encryption (WEP): [disabled or turned off]

Note The Network Name (SSID) is case-sensitive; be sure to use lowercase characters. If you make a error in entering the SSID, encryption, or authentication configuration, you may be unable to connect to the access point and join the network.

If your connection fails after entering one of these configuration items, then you must reset the print server to factory-default settings ("cold reset"), according to the procedure on page 5-14), then reenter the correct configuration.

- The print server is turned on and operating properly (print a configuration page).
- The PC you are using is within range of the print server (see "Wireless Signal Weak or Failed" below on page 5-8).
- There are fewer than six devices total on the *ad hoc* network (with SSID `hpsetup`).
- There is no access point in the vicinity that is configured with SSID `hpsetup`.
- There are not multiple print servers that are being configured at the same time. If so, turn all off except the one you want to configure.

—After Initial Setup:

If you have successfully configured the wireless print server with a network connection to your network, but your network computers are unable to communicate with the printer (including a “ping” command), try the following:

- Print a configuration page (see page 5-4) and verify all configuration settings for your network. Common errors include incorrect entries for the following items:
  - Communication Mode (`Ad Hoc` or `Infrastructure`)
  - Network Name (SSID), which is case-sensitive
  - Authentication method
  - Encryption level, encryption key entries, or the specified transmit key
  - IP address
  - BSSID (Basic Service Set Identifier), which distinguishes one wireless LAN from another even though they have the same SSID.
- Verify that the printer is within range of the network. See page 5-10.
- Have you performed a factory-default reset (“cold reset”)?
  Whenever you do, you must repeat the initial setup—chapters 3 and 4.

Wireless Signal Weak or Failed

Wireless LAN radio signals can penetrate many indoor structures and can reflect around obstacles. However, wireless communication range and performance depends on a variety of factors, including the number of users, the quality and physical placement of the wireless hardware, and the sources of radio signal interference (for example, microwave ovens and cordless telephones use similar frequencies that may interfere with wireless LAN signals). In general, the HP Jetdirect wireless print server's data transfer rates will decrease with increasing distance, obstructions and interference.

For these Symptoms:

- Wireless/Status light appears yellow or remains slowly blinking green (see the table of status lights on page 5-2)
- On the configuration page (see page 5-4), Signal Strength is poor or marginal.
- Print jobs are excessively slow or interrupted.

Try these Actions:

- Re-orient the print server around the printer (limited by the length of its USB cable, of course). In general, having the print server pointed toward the access point or wireless PC will improve reception and performance.
- Reduce or remove sources of interference. Metallic objects can absorb or attenuate radio signals, and devices such as microwave ovens and cordless phones operate using similar radio frequencies.
- Reduce the distance between the print server and the access point or wireless PC. This can be accomplished by:
  - moving the print server, and the printer if necessary.
  - moving the access point or wireless PC
  - adding an additional access point *(infrastructure* mode only)

- Elevate the access point's antenna. In most office environments, elevating the access point's antenna will improve the range and performance of all wireless devices.
- Check to see what a wireless device such as a laptop computer receives for signal strength, as reported in its client utility. The print server should have a similar signal strength when positioned in the same location.

  Also, many client utilities have the ability to a test between two devices (client-to-client in *ad hoc* mode or client-to-access point in infrastructure mode). The method to do this varies from client to client.

Firmware Upgrade Failure

HP Jetdirect wireless print servers support network installation, or download, of firmware upgrades to provide new or enhanced features. As with other HP Jetdirect print servers, firmware upgrades may be downloaded using tools such as HP Download Manager (Windows), HP Web Jetadmin, or FTP (File Transfer Protocol).

- If the firmware upgrade fails to complete, you should **restart the upgrade without cycling the power** to the print server.
- If power is lost during the upgrade and the print server must be restarted, your next steps depend on whether the print server is configured for server-based authentication.

—If Server-Based Authentication *is Not* Used

If either type of firmware upgrade failure occurs on an HP Jetdirect wireless print server that is not configured for server-based authentication, simply restart the download process and try again. If the print server must be power-cycled before you can restart the upgrade, the print server will regain its previous configuration prior to the download failure.

—If Server-Based Authentication *is* Used

Caution If possible, *do not power-cycle or re-initialize* the print server. Simply restart the upgrade process and try again. When power-cycled, the print server will lose its authentication settings and will not be able to access the network.

If the print server is power-cycled or re-initialized, see the procedure below.

HP Jetdirect wireless print servers support the following server-based authentication methods over the network:

- RADIUS using MD5
- RADIUS using TLS

(For more information, see page 1-6 in this guide, or see the *Administrator's Guide (Models 610n/615n/680n/380x)* on the HP Jetdirect CD-ROM provided with the print server.)

If the print server is power-cycled during its firmware upgrade process and thus loses its wireless network connection, follow these steps:

1. Install a download utility (such as HP Download Manager or HP Web Jetadmin) on a supported wireless computer.
2. Copy the firmware upgrade files onto the wireless computer.
3. Configure the wireless network settings on the computer to match the default settings on the HP Jetdirect wireless print server:
   - Communication Mode: `Ad Hoc`
   - Network Name (SSID): `hpsetup`
   - Encryption (WEP): [disabled or turned off]

Note Due to the state of the HP Jetdirect wireless print server after a failed download and power-cycle, the HP Wireless Setup wizard cannot be used to configure the print server.

4. On the wireless computer, create an IP path to the default IP address on the HP Jetdirect wireless print server (192.0.0.192). Use one of the following methods:
   - Use a `route add` command from your system prompt, or
   - Reconfigure the computer's IP address to match the default IP network of the print server (for example, use 192.0.0.193).
5. Run the HP Download Manager and complete the firmware upgrade.
6. After the firmware upgrade completes successfully, restart the print server. The configuration settings prior to the upgrade failure will be restored.

Resetting to Factory Defaults ("Cold Reset")

Once you configure the HP print server, the configuration settings are retained in memory unless you manually reset them to factory defaults. If you lose communications with the HP Jetdirect print server, or it fails to operate properly, you may need to reset the print server to its factory-default configuration. This is called a "cold reset".

Procedure

To reset the print server configuration to factory defaults, follow these steps:

1. Unplug the power module from the back of the print server.
2. While holding down the test button ☑ on the back of the print server, plug the power module back into the print server and continue to hold down the test button button for about five seconds. Any user-configured settings will be erased.

Note When this step is done, the print server responds exactly like it was fresh from the factory. This 802.11b print server will be in *ad hoc* mode after this procedure; it will scan for a network with an SSID of `hpsetup` to join. Until it finds a network, it will continue scanning with an IP address `0.0.0.0`. Once a network is established by completing step 4 below (for example by having a laptop establish a network with a name of `hpsetup`), it will go to the default IP address 192.0.0.192.

If an X.509 certificate is installed for SSL/TLS secure embedded Web services, it will be saved over a cold reset.

3. Print a Jetdirect configuration page to confirm that factory-default values you expect have been assigned. See page 5-4.
4. You must repeat the setup procedures in chapters 3 and 4.

Getting Support and Service

HP Support by Phone

To troubleshoot before you phone, see chapter 5, "Troubleshooting Problems". If you need further help, highly trained technicians are ready to take your call.

See the table below for phone numbers for HP Jetdirect products. For the most recent HP support telephone numbers worldwide, visit http://www.hp.com/support/support_assistance. In the USA, the support telephone number for HP Jetdirect products is: **208-323-2551**.

Note Telephone fees are the responsibility of the caller. Rates may vary. Contact your local telephone company for current rates.

Australia	(03) 8877 8000	Malaysia	+ 60 (3) 295 2566
Austria	+ 43 (0) 810 00 6080	Mexico	01 800 472 6684
Belgium (Dutch)	+ 32 (0)2 626 8806	Netherlands	+ 31 (0)20 606 8751
Belgium (French)	+ 32 (0)2 626 8807	New Zealand	+ 64 (9) 356 6640
Canada	905 206 4663	Norway	+ 47 22 11 6299
China	+ 86 (0)10 6564 5959	Penang	1 300 88 00 28
Czech Republic	+ 42 (0)2 6130 7310	Philippines	+ 63 (2) 867 3551
Denmark	+ 45 39 29 4099	Poland	+ 48 22 865 98 00
Finland	+ 358 (0)203 47 288	Portugal	+351 21 3176333
France	+ 33 (0)1 43 62 34 34	Russian Federation	+7 095 797 3520 (Moscow)

Germany*	+ 49 (0)180 52 58 143 (0,12 €/Min)	Singapore	+ 65 272 5300
Hong Kong SAR	800 96 7729	Spain	+ 34 902 321 123
Hungary	+36 (0)1 382 1111	Sweden	+ 46 (0)8 619 2170
India	+ 91 11 682 6035	Switzerland	+ 41 (0)848 80 11 11
Indonesia	+ 62 (21) 350 3408	Taiwan	+ 886 (2) 2717 0055
Ireland	+ 353 (0)1 662 5525	Thailand	+ 66 (2) 661 4000
Israel	+ 972 (0)9 9524848	Turkey	+90 (216) 579 71 71
Italy	+ 39 02 264 10350	English International (UK)	+ 44 (0)207 512 52 02
Japan	+ 81 3 3335 8333	USA	208 323 2551
Korea	+ 82 (2) 3270 0700	Vietnam	+ 84 (0)8 823 4530
For all other countries/regions, contact your reseller.			
* For Germany, contact your local telephone company for current rates.			

Getting Warranty Service

See “Getting Warranty Service” on page D-4.

HP on the World Wide Web:

Support pages on the HP Web site www.hp.com/support/net_printing are a collection of information to help solve your issues and answer your questions about your HP Jetdirect print server, 24 hours a day, 7 days a week.

HP User Forums (USA only)

Go online, anytime, and you'll also find helpful user forums—a great source of ideas and suggestions for using your HP Jetdirect print server. You can access the user forum for network printing from http://www.hp.com/go/forums.

Software, Driver, and Firmware Upgrades

Hewlett-Packard offers downloadable electronic upgrades for HP Jetdirect print servers with internal Flash memory. The electronic upgrades are are installed using HP Jetdirect Download Manager (Windows) or HP Web Jetadmin tools.

Current information about drivers, software versions, and HP Jetdirect firmware upgrades are available from the following:

World Wide Web	Access HP's online support at http://www.hp.com/support/net_printing
America Online	Receive drivers and upgrades by downloading them to your computer from the HP Forum.
HP Distribution Center	Order drivers and upgrades for HP printers by calling the HP Distribution Center at 805-257-5565 (USA only).
FTP Site	Download printer drivers and upgrades from HP's anonymous FTP site at ftp://ftp.hp.com/pub/networking/software

Technical Reference

Radio: Channel Frequencies

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13	2472
7	2422	14	2484

HP Jetdirect CD-ROM Software

Note If you are on a network that uses TCP/IP, you must configure the print server with TCP/IP operating parameters. Check with your network administrator for a valid IP address and other required parameters.

The HP Jetdirect CD-ROM contains printer installation software for the network environments listed in the table below.

Network	System	HP Jetdirect CD-ROM Software
Microsoft networks (IP or IPX)	Windows 95/98/Me, Windows NT 4.0, Windows 2000, XP	Use the HP Install Network Printer wizard (see chapter 4) on each system that will print directly to the printer. If your system is a server on a client-server network, share the printer on the server so that it's available to clients.
Novell NetWare NDS or Bindery networks (Queue Server Mode only) (IPX)	Windows 95/98/Me, Windows NT 4.0, Windows 2000, XP	Use the HP Install Network Printer wizard (see chapter 4) to set up the appropriate queues on the NetWare server and Jetdirect print server.
UNIX networks (IP)	HP-UX, Sun Solaris	Use the *HP Jetdirect Printer Installer for UNIX* (see the documentation and release notes on the HP Jetdirect CD-ROM).
Apple networks (EtherTalk)	Mac OS 8, 9.x, 10	Use the HP LaserJet utilities for Mac OS (see the documentation and release notes installed with the software).

HP Jetdirect Tools Summary

HP Jetdirect Network Configuration and Management

- Embedded HP Jetdirect services:
- BootP or DHCP
  - TFTP
  - SNMP
  - Telnet
  - Embedded Web Server, HTTP (TCP port 80)
- HP management and support software:
  - HP Web Jetadmin software (TCP/IP and IPX/SPX networks)
  - HP Jetdirect Download Manager (HP Jetdirect firmware upgrades)

HP Jetdirect Printing Support

- Embedded HP Jetdirect services:
  - LPD printing (TCP port 515)
  - IPP printing (TCP port 631)
  - FTP printing (TCP ports 20, 21)
  - Raw IP printing (HP-proprietary TCP ports 9100, 9101, 9102)
- HP network printing setup software:
  - HP Jetdirect Wireless Setup wizard (Windows)
  - HP Install Network Printer wizard (Windows)
  - HP Jetdirect Printer Installer for UNIX
  - HP LaserJet utilities for Macintosh (AppleTalk)
  - HP Internet Printer Connection software (Windows)
  - HP IP/IPX Printer Gateway (Novell NetWare)

For additional information, see the *Administrator's Guide, HP Jetdirect Print Server (Models 610n/615n/680n/380x)*, provided on the HP Jetdirect CD-ROM. HP software solutions may be downloaded from HP online support at:

`www.hp.com/support/net_printing`

Specifications and Regulatory Statements

Networking Specifications

Wireless Networking

Standards	IEEE 802.11b standard for wireless LANs Wi-Fi (Wireless Fidelity) certified by WECA (Wireless Ethernet Compatibility Alliance)
Encryption	WEP 40/64- or 104/128-bit 802.1x

Supported Network Operating Systems and Protocols

Microsoft Windows 95, 98, ME	TCP/IP IPX/SPX direct mode
Microsoft Windows 2000, XP	TCP/IP IPP IPX/SPX direct mode
Microsoft Windows NT 4.0 and later	TCP/IP IPP IPX/SPX direct mode DLC/LLC
Apple Macintosh OS 8.6 and later	EtherTalk
Novell NetWare 4.2, 5.x, 6 NDS NDPS	IPX/SPX; TCP/IP and IPX/SPX IPP
HP-UX 10.x, 11.x Solaris v2.5x, 2.6, 7, 8 (SPARC systems only) IBM AIX v3.2.5 and later MPE-ix v5.5	TCP/IP
Artisoft LANtastic 7.0	DLC/LLC
Line Printer Daemon	LPD

Physical Specifications

Interfaces

Port	Specification
Network	See “Networking Specifications” above.
USB	Female “A” connector, complies with USB version 1.1 specifications

Dimensions

	With clip attached	Excluding any protrusions for connectors, clips, and so on
Width	97 mm (3.8 in)	92 mm (3.6 in)
Length	129 mm (5.1 in)	129 mm (5.1 in)
Height	45 mm (1.8 in)	36 mm (1.4 in)

Weight

Weight	108 g (3.9 oz)

Environmental

	Operating environment	Storage environment
Temperature	10° C to 55° C (50° F to 131° F)	–40° C to 70° C (–40° F to 158° F)
Relative humidity	15% to 95% at 40° C (104° F)	15% to 90% at 65° C (149° F)
Altitude	4.6 km (15,000 ft)	4.6 km (15,000 ft)

Electrical Specifications

Power Requirements

	Print server	Power module	
Input voltage	13 Vdc	See power module “Input rating” below.	
Nominal output voltage	n/a	13 Vdc	
Input current	210 mA @ 13 V	52 mA @ 110 V	Depends on particular power module
Max. output current	n/a	300 mA	
Frequency range	dc	50/60 Hz	Depends on particular power module
Power consumption	2.73 W	4 W	

Power Modules

Countries/Regions	Part num.	Input rating	Output rating
Australia, New Zealand, Argentina	0950-3172	240 Vac 50 Hz	13 Vdc @ 300 mA
	0950-3358	240 Vac 50 Hz	13 Vdc @ 800 mA
China	0950-2806	220 Vac 50 Hz	13 Vdc @ 300 mA
	0950-3347	220 Vac 50 Hz	13 Vdc @ 800 mA
Continental Europe	0950-3170	230 Vac 50 Hz	13 Vdc @ 300 mA
	0950-3349	230 Vac 50 Hz	13 Vdc @ 800 mA
Japan	0950-3173	100 Vac 50 Hz	13 Vdc @ 300 mA
	0950-3352	100 Vac 50 Hz	13 Vdc @ 800 mA
South Korea	9100-5168	220–240 Vac 50 Hz	13 Vdc @ 625 mA
	0950-3351	220 Vac 50 Hz	13 Vdc @ 800 mA
South Africa, India	9100-5171	220–250 Vac 50 Hz	13 Vdc @ 625 mA
	0950-3354	220–250 Vac 50 Hz	13 Vdc @ 800 mA
United Kingdom, Singapore, Ireland, Hong Kong	0950-3171	220–240 Vac 50 Hz	13 Vdc @ 300 mA
	0950-3350	220–240 Vac 50 Hz	13 Vdc @ 800 mA
USA, Canada, Latin America, Taiwan	0950-3169	110–127 Vac 60 Hz	13 Vdc @ 300 mA
	0950-3348	110–127 Vac 60 Hz	13 Vdc @ 800 mA

Note: If two parts are listed for one country/region, either part can be used regardless of output rating.

USB: Downstream Power Supplied

Complies with USB 1.1 specifications

Electromagnetic Specifications

Electromagnetic Emissions

USA	FCC part 15 Class B
Canada	ICES-003 (B)
Japan	VCCI Class 1, 2
Europe*	CISPR-22/EN55022, EN61000-3-2, EN61000-3-3 Class B
Australia/ New Zealand	AS/NZA 3548
Russia	GOST 292116
Taiwan	CNS 13438 Class A
Korea	EMI law 1996-98
* For EU immunity compliance, see the Declaration of Conformity on page C-12	

Wireless Telecommunications Certifications

- ETS 300 328
- ETS 301 489-17
- FCC 15.247

Safety Statements

This product complies with:

- IEC 950: (1991)+A1, A2, A3, A4 / EN60950 (1992)+A1, A2, A3, A4, A11
- UL 1950
- CSA 950
- NOM-019-SCIFI-1994

Regulatory Statements

USA: Federal Communications Commission (FCC)

FCC Notice: Class B Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Exposure to Radio Frequency Radiation

Caution The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

The product and any attached external antenna, if supported, shall be placed in such a manner to minimize the potential for human contact during normal operation. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

Canada:

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications. The internal wireless radio complies with RSS 210 of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada. Le composant RF interne est conforme à la norme CNR-210 d'Industrie Canada.

Australia:

This equipment complies with Australian EMC requirements.

Korea: EMI

사용자 안내문 (B 급 기기)

이 기기는 비업무용으로 전자파장해검정을 받은 기기로서, 주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

Taiwan: Class A

警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Japan:

VCCI Class B

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

ARIB STD-T66 Notice

機器に内蔵の無線ＬＡＮをお使いのお客様へ。

この機器の使用周波数帯では、電子レンジ等の産業・科学・医療用機器のほか工場の製造ライン等で使用されている移動体識別用の構内無線局（免許を要する無線局）及び特定小電力無線局（免許を要しない無線局）が運用されています。

1 この機器を使用する前に、近くで移動体識別用の構内無線局及び特定小電力無線局が運用されていないことを確認して下さい。

2 万一、この機器から移動体識別用の構内無線局に対して電波干渉の事例が発生した場合には、速やかに使用周波数を変更するか又は電波の発射を停止した上、下記連絡先にご連絡頂き、混信回避のための処置等（例えば、パーティションの設置など）についてご相談して下さい。

3 その他、この機器から移動体識別用の特定小電力無線局に対して電波干渉の事例が発生した場合など何かお困りのことが起きたときは、次の連絡先へお問い合わせ下さい。

連絡先： 03-5344-7181

2.4DS1

China: Chinese Safety Statement

HP网络产品使用安全手册

使用须知

欢迎使用惠普网络产品，为了您及仪器的安全，请您务必注意如下事项:

1. 仪器要和地线相接，要使用有正确接地插头的电源线，使用中国国家规定 的220V 电源。
2. 避免高温和尘土多的地方，否则易引起仪器内部部件的损坏。
3. 避免接近高温，避免接近直接热源，如直射太阳光、暖气等其它发热体。
4. 不要有异物或液体落入机内，以免部件短路。
5. 不要将磁体放置于仪器附近。

警告

为防止火灾或触电事故，请不要将该机放置于淋雨或潮湿处。

安装

安装辅助管理模块，请参看安装指南。

保修及技术支持

如果您按照以上步骤操作时遇到了困难，或想了解其它产品性能，请按以下 方式与我们联络。

如是硬件故障:

1. 与售出单位或当地维修机构联系。
2. 中国惠普有限公司维修中心地址:
   北京市海淀区知春路49号希格玛大厦
   联系电话: 010-62623888 转 6101
   邮政编码: 100080

如是软件问题:

1. 惠普用户响应中心热线电话: 010-65645959
2. 传真自动回复系统: 010-65645735

European Union:

Declaration of Conformity

The Declaration of Conformity complies with ISO/IEC Guide 22 and EN45014. It identifies the product, manufacturer's name and address, and applicable specifications recognized in the European community.

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:	Hewlett-Packard Company
Manufacturer's Address:	8000 Foothills Blvd. Roseville, Ca. 95747-5677 U.S.A.

declares, that the product

Product Name:	HP Jetdirect 380X
Model Number:	J6061A
Regulatory Model:	RSVLD-0101
Radio module Model:	5185-3843
Product Options:	all

conforms to the following Product Specifications:

Safety:	EN 60950:1992+A1+A2+A3+A4+A11
Health:	EU: 1999/519/EC
EMC:	EN 55022:1998 Class B EN 55024:1998 EN 61000-3-2:1995+A14 EN 61000-3-3:1995
Radio:	EN 301 489-17:2000 EN 300 328-2:2000 Notified Body Number- 0682 CE 0682 (CE) CETECOM ICT Services GmbH GmbH, Untertuerkheimer Str. 6-10 D-66117 Saarbruecken

Supplementary Information:
The product herewith complies with the requirements of the R&TTE Directive 1999/5/EC Annex IV, EMC Directive 89/336/EEC, and carries the CE mark accordingly.

Date: January 31, 2002

Jill Stevenson Product Regulations Manager

European contact for regulatory topics only: Hewlett-Packard GmbH, HQ-TRE, Herrenberger Straße 130, 71034 Böblingen, Germany

European Union Notice

Radio products with the CE 0682 or CE alert marking comply with the R&TTE Directive (1999/5/EC) issued by the Commission of the European Community.

Notice Low-power radio LAN product operating in 2.4-GHz band, for Home and Office environments. In some countries/regions, using the product may be subject to specific restrictions as listed for specific countries/regions below.

Belgium:

For private usage outside buildings across public grounds over less than 300m, no special registration with IBPT/BIPT is required. Registration to IBPT/BIPT is required for private usage outside buildings across public grounds over more than 300m. An IBPT/BIPT license is required for public usage outside building. For registration and license please contact IBPT/BIPT.

France:

Restricted frequency band: only channels 9 through 13 (2446.5 MHz through 2472 MHz) may be used in France.

Not allowed for outdoor use in public areas.

For outdoor use on private areas, individual authorization from ART is required.

Netherlands:

License required for outdoor installations. Check with reseller for procedure to follow.

Italy:

Italia:

Ai sensi dell'articolo 6, lettera b, del decreto del Presidente della Repubblica 5 ottobre 2001, n. 447 è consentito l'utilizzo di questa apparecchiatura nell'ambito del fondo (ai sensi dell'articolo 183, comma secondo, del decreto del Presidente della Repubblica n. 156 del 1973) senza la necessità di licenza o di autorizzazione.

Nota: L'art. 183, comma secondo, del decreto del Presidente della Repubblica 29 marzo 1973, n.156, recante: "Approvazione del testo unico delle disposizioni legislative in materia postale, di bancoposta e di telecomunicazioni" e' il seguente: "Tuttavia e' consentito al privato di stabilire, per suo uso esclusivo, impianti di telecomunicazioni per collegamenti a filo nell'ambito del proprio fondo o di piu' fondi di sua proprieta', purche' contigui, ovvero nell'ambito dello stesso edificio per collegare una parte di proprieta' del privato con altra comune, purche' non connessi alle reti di telecomunicazione destinate a pubblico servizio."

Limited Global Warranty Statement and Service

HEWLETT-PACKARD LIMITED GLOBAL WARRANTY STATEMENT

HP Product	Duration of Warranty
HP Jetdirect 380x external wireless print server for USB	Three (3) years

1. HP warrants to you, the end-user customer, that HP hardware, accessories and supplies will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products that prove to be defective. Replacement products may be either new or equivalent in performance to new.
2. HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for a period of NINETY (90) DAYS, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the NINETY (90) day period, HP will replace software that does not execute its programming instructions due to such defects.
3. HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.
4. HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

5. Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.
6. HP's limited warranty is valid in any country/region or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive may vary according to local standards. HP will not alter form, fit or function of the product to make it operate in a country/region for which it was never intended to function for legal or regulatory reasons.
7. TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE. Some countries, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country/region to country/region, state to state, or province to province.
8. HP will be liable for damage to tangible property per incident up to the greater of $300,000 or the actual amount paid for the product that is the subject of the claim, and for damages for bodily injury or death, to the extent that all such damages are determined by a court of competent jurisdiction to have been directly caused by a defective HP product.

9. TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries, states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

Local warranty statements

Australia and New Zealand

For consumer transactions in Australia and New Zealand: The warranty terms contained herein except to the extent lawfully permitted, do not exclude, restrict, or modify and are in addition to the mandatory statutory rights applicable to the sale of this product to you.

Getting Warranty Service

For your records, please retain your original proof of purchase. Record the product number and serial number. Your product number is on a label on the bottom of the print server, for example, “J6061A”. The serial number is on the same label.

Your authorized dealer

If you encounter difficulty, begin by contacting the person who sold you the HP Jetdirect print server to you. Your HP Authorized Dealer will be familiar with your requirements and can provide assistance.

HP support for warranty service

For warranty service on HP Jetdirect products, call HP support. See “HP Support by Phone” on page A-1 or visit http://www.hp.com/support/support_assistance. The HP support representative will help you with troubleshooting, and advise you on warranty service. When calling, please have the following information ready:

- HP Jetdirect product you are calling about, for example, “J6061A”.
- Model number of the product, for example, “380X”.
- Serial number of the product.
- Complete description of the problem.

Service billing (out of warranty)

When ordering a replacement unit for out-of-warranty service, you may be charged a repair cost. See your HP Authorized Dealer or your local HP Sales and Service Office representative. Or, you can call HP at (800) 227-8164 (USA only); prepare to supply shipping and billing addresses and payment information.

Service outside the USA

Contact your HP Authorized Dealer or HP Sales and Service Office to obtain information on prices, exchange unit availability, and instructions.